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DIVISION OF WATER RESOURCES
EDWARD HYATT, State Engineer

BULLETIN No. 42

SANTA CLARA INVESTIGATION

1933

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Special acknowledgment is due to H. L. Haehl, Consulting Engineer of San Francisco, for the use of valuable stream flow data collected by him on Coyote River in the years 1903 to 1907 and 1912 to 1914, and to F. H. Tibbetts, Consulting Engineer of San Francisco, for valuable percolation and well data collected by him in the years 1920–21 in connection with an investigation and report made by him and Stephen E. Kieffer for the Santa Clara Valley Water Conservation Committee.

Statistics from the 1930 census as to irrigated acreage within the district were furnished by the Director of the U. S. Census, and Mr. Leroy Anderson, President of the Santa Clara Valley Water Conservation District, canvassed the various growers and marketing associations for information as to acreage in the different irrigated crops. Mr. Anderson's advice and cooperation on many occasions are deserving of special mention.

The San Jose Water Company and the Campbell Water Company furnished records of fluctuation of ground water level in some of their wells which makes it possible to connect the earlier records of the U. S. Geological Survey and Tibbetts and Kieffer with the records obtained by the Division during the course of this investigation.

Ten private observers whose names are noted in Table 1 turned over to the Division their previous records of precipitation at stations maintained by them and reported current precipitation regularly during the course of the investigation. These data were used in conjunction with the long term records of the U. S. Weather Bureau at San Jose, Los Gatos, Lick Observatory and Gilroy.

The following earlier reports containing valuable data bearing upon the subject in hand are listed in their chronological order:

U. S. Dept. Agriculture; O. E. S. Bulletin 158 Separate No. 2, entitled Irrigation in Santa Clara Valley, California. (1905.)

U. S. Dept. Agriculture; O. E. S. Bulletin 254 entitled Irrigation Resources of California and Their Utilization. (1913.)

Unpublished mimeographed report by R. L. Egenhoff to be found in Library of the Division which report contains data with reference to surface diversions from Santa Clara Valley streams collected in connection with investigation covered by the report last described above.

Water Supply Paper 400 of U. S. Geological Survey. (1916.)

Report by F. H. Tibbetts and S. E. Kieffer, to the Santa Clara Valley Water Conservation Committee on the Santa Clara Valley Water Conservation Project. (1921.)

Water Supply Paper 519 by the U. S. Geological Survey entitled Ground Water in Santa Clara Valley, California. (1924.)

Water Supply Papers 461, 531, 551, 571, 591, 611, 631, 651, 671, 691, 706, 721 and unpublished records of the U. S. Geological Survey covering stream flow.

Report on Waste Water Salvage Project by F. H. Tibbetts with review by H. L. Haehl. (Oct. 2, 1931.)

Progress Reports on Santa Clara Investigation dated Nov. 1, 1930, and Nov. 1, 1931, by Division of Water Resources.

ORGANIZATION

EARL LEE KELLY ..... *Director of Public Works*
EDWARD HYATT ..... *State Engineer*

This investigation and report has been under the general direction of

HAROLD CONKLING
Deputy State Engineer

The investigation was conducted and the report prepared
By
EVERETT N. BRYAN
Supervising Hydraulic Engineer

Field work was in charge of
A. E. RAE
Resident Engineer

FOREWORD

The investigation of water resources of Santa Clara Valley, Santa Clara County, described in this report was undertaken, and this report is published, under the provisions of Chapter 832, Statutes of 1929, which provided for a continuation of the general investigation of the water resources of California which was initiated under the provisions of Chapter 889, Statutes of 1921 and has been in progress more or less continuously since that time under succeeding enactments of the same general import.

SANTA CLARA INVESTIGATION

By Everett N. Bryan *

CHAPTER I

INTRODUCTION, SUMMARY AND CONCLUSIONS

Origin and Purpose of Investigation.

As a result of general alarm over the continued retreat of ground water from which irrigation and domestic water supplies are drawn in northern Santa Clara County, the Division of Water Resources was requested by the Santa Clara Valley Water Conservation District to undertake an investigation of water supply conditions in that area, and under date of January 1, 1930, an agreement was signed between the District and the Division looking toward "A general survey of the water resources of Santa Clara Valley" to extend over a period of three years, the work to be under the direction of the Division and to be financed by equal contribution of the parties in amounts totaling $7,000 the first year and $4,200 in each of the succeeding years. A copy of this agreement is presented as Appendix A.

The ground water situation in this area is one which has commanded the attention of thoughtful residents for many years, efforts having been made in 1921 and again in 1925 to organize the so-called Santa Clara County Irrigation District under provisions of chapter 822, Statutes of 1921, which district was proposed as an agency to bring about conservation measures and relief. In 1926 a voluntary association known as the Valley Water Conservation Association was formed and did some spreading of storm waters in an effort to increase the normal contributions to ground water. It was through the efforts of this association that the Santa Clara Valley Water Conservation District was formed by election on November 5, 1929, and almost immediately thereafter the agreement noted above was concluded between the District and the Division.

Area Under Investigation.

The Santa Clara Valley Water Conservation District embraces a gross area of 133,000 acres in northern Santa Clara Valley, extending from near Coyote Station of the Southern Pacific Railroad Company on the south to San Francisco Bay on the north and extending laterally to the foothills on the east and west. In order to form a reasonable basis for conclusions as to the availability of local water supplies, however, it is necessary to include in the study tributary drainages as follows:

* Supervising Hydraulic Engineer, Division of Water Resources.

Drainage Basins	*Area in Square Miles*
Agua Caliente, Agua Fria, Toroges, Scott, Calero, Arroyo De Los Coches, Berryessa, Penitencia, Dry and Silver Creeks and other minor east side tributaries having a mountain and foothill drainage area of	85.3
Coyote River having a mountain and foothill drainage area above Madrone gaging station of	193.0
Alamitos Creek having a mountain and foothill drainage area above the Alamitos Creek gaging station of	28.5
Guadalupe River having a mountain and foothill drainage area above the Guadalupe gaging station of	12.6
Los Gatos Creek having a mountain and foothill drainage area above the Los Gatos gaging station of	40.0
Stevens Creek having a mountain and foothill drainage area above the Cupertino gaging station of	18.1
San Tomas, Campbell, Calabazas, Permanente, San Antonio Creeks and other minor west side tributaries having a gross drainage area of	52.3
Total Tributary Mountain and Foothill drainage area, square miles	429.8

Between the mountain and foothill areas listed immediately above and the district boundary line there lies a valley area of 53.4 square miles which is dependent for its water supply upon run-off from the mountain and foothill areas and local precipitation. Its ground water supply lies for the most part too far above that of the valley floor to be affected by what goes on within the district in the way of pumping, but the draft by this area upon its own underlying ground water supply of course reacts upon that of the district.

The major contributors to the water crop of the valley and the most important sources susceptible of further development are Coyote River, Guadalupe River, Alamitos Creek, Los Gatos Creek and Stevens Creek. The drainage areas of these streams reach well into the mountain sections of more abundant precipitation and run-off. A map showing the drainage areas may be found in the pocket at the end of this report.

Scope of This Report.

This report covers an investigation, the scope of which was limited to such work as was practicable, with the funds available, in the way of a determination of surface run-off entering the valley from the various mountain and foothill drainage areas, the waste into San Francisco Bay, accretions and losses along the stream channels on the valley floor, rate of percolation and extent and availability of percolation beds within the valley, the behavior of ground water as determined by the observation of water levels in selected wells, and the relation of normal recharge to draft.

Summary and Conclusions.

1. The general ground water level in Santa Clara Valley, exclusive of the former artesian zone north and west of San Jose, receded 95 feet between the spring of 1915 and the spring of 1933.

2. This recession probably indicates a decrease of approximately 729,000 acre-feet in available ground water storage during the 18-year period or 40,000 acre-feet per year.

3. This decrease in available storage should not in itself be construed to mean that under normal conditions the present draft exceeds replenishment.

4. The water level in a ground water basin represents a balance between replenishment, whether natural or stimulated, and losses, whether by pumping or natural waste. The disturbance of either of these factors will affect this balance and establish a new level.

5. Natural replenishment of ground water in Santa Clara Valley has been profoundly affected since 1915 by lack of rainfall and resulting diminished stream flow. Precipitation during the 13 years preceding 1915 exceeded normal by the equivalent of 1.15 full years of rainfall, and the surface stream flow debouching into the valley exceeded normal by the equivalent of 3.5 full years of normal discharge, whereas precipitation during the 17 years since 1915 has been subnormal in an amount equivalent to 2.25 full years of rainfall, and surface stream flow debouching into the valley has been subnormal by an amount equivalent to 6.7 full years of normal discharge.

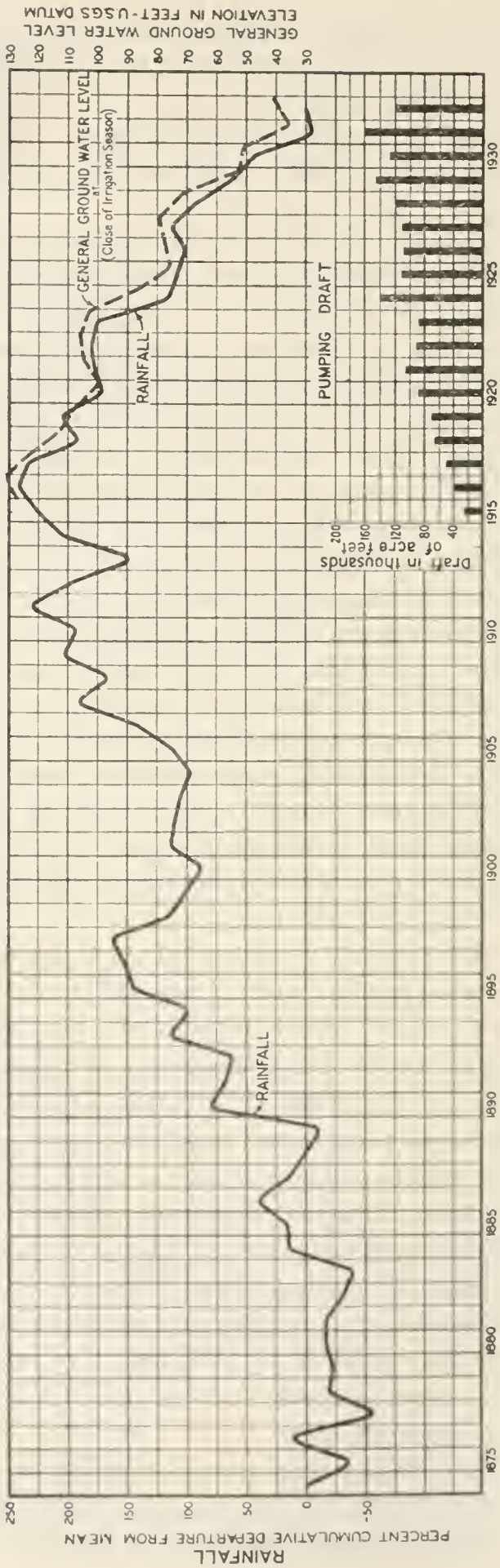
6. Pumping draft upon ground water of the valley had increased materially in years immediately preceding 1915 and since that time has increased roughly from 25,000 to an average of 134,000 acre-feet per annum. This of itself would have caused a substantial lowering of ground water level even had precipitation and natural recharge been normal.

7. The total mean annual discharge of surface streams at the rim of the valley during a period of normal rainfall is estimated to approximate 173,000 acre-feet of which roughly 41 per cent is from the Coyote, 17 per cent from the Los Gatos, 15 per cent from the Alamitos and Guadalupe, 4½ per cent from the Stevens, 11 per cent from other minor west side streams, and 11½ per cent from minor east side streams.

8. The mean annual surface waste of these streams into San Francisco Bay during a period of normal rainfall is estimated to approximate 104,000 acre-feet, but of this a considerable portion originates on the valley floor below where it is practicable to conserve it.

9. Ground water has fallen to a level such that during the past two years it is doubted there could have been any appreciable escape or waste from the underground basin because the level along the bay shore is at or below sea level.

10. Natural percolation from these streams to ground water greatly exceeds the difference between measured inflow at the rim of the valley and measured outflow at the bay, there being considerable



Relation of Fluctuation of Ground Water Levels in Santa Clara Valley to Precipitation and Pumping Draft.

inflow at intermediate points. Percolation on Coyote River is susceptible of determination within reasonably close limits because of the abundance of data which have been accumulated as to flow at various gaging stations and is estimated to approximate 23,000 acre-feet per year during a period of normal precipitation but data are lacking with which to make a similar estimate of the total percolation on other valley streams. However, proven rates of percolation on these remaining streams are somewhat more than equal to those on the Coyote, which was measured at much higher stages, and it is believed the natural percolation from these other streams, due to the larger total quantities carried and the wider distribution and greater exposure to percolation, is several times as great as on the Coyote.

11. Whatever percolation is assumed for these remaining streams it appears clear that there are other sources of replenishment of ground water in Santa Clara Valley than from the streams traversing the valley floor. Thus the estimated draft during the two-year period December, 1930, to December, 1932, is 279,000 acre-feet, the estimated net loss in ground water storage is 51,000 acre-feet, and the estimated contribution of Coyote River to ground water is 21,500 acre-feet, which would indicate that if there were no other sources of replenishment than the Coyote the remaining streams must have contributed almost 10 times as much as the Coyote to ground water, and this is impossible.

12. The trend of the hydrograph showing a long term record of general ground water levels in the valley, which is presented on the opposite page, indicates that draft has not exceeded replenishment in years of normal precipitation. In the years 1915–16, 1920 to 1923, 1925 to 1927, and 1931–32 when precipitation was normal or slightly above there has been a recovery of ground water levels. During the year December, 1931, to December, 1932, there was a recovery in ground water storage estimated at 44,000 acre-feet, although precipitation was only slightly above normal and stream flow was slightly below normal. An examination of the plate in the pocket of this report entitled "Lines of Equal Fluctuation of Ground Water—December, 1931, to December, 1932," together with the records of individual wells from which this plate was prepared, will indicate, however, that there are small areas, particularly in the westerly portion of the valley, where there was no recovery during the year 1932 and that in these areas the recession of ground water in recent years has exceeded the average as shown by the composite curve of the plate opposite this page. In years of subnormal precipitation with resultant subnormal replenishment it will be observed that pumping draft is greatly increased, as in 1924, 1929, 1931, etc., thereby aggravating the recession.

13. Ground water levels can also be raised and reserve storage increased by stimulating additional percolation, either by spreading stream flow at favorable points within and without the natural stream channels or by extending the season of flow in the natural streams through the operation of surface reservoirs which would hold back flood crests normally escaping to the ocean, until a reduction of flow in the streams of the valley gives an opportunity for the absorption of reservoir releases. The estimated amounts which can be conserved by surface storage and by increased facilities of varying capacities for spreading within and without the respective stream channels are shown in tables 12 to 15.

14. Conservation of the surface waste from streams debouching into and traversing Santa Clara Valley affords the best means of restoring ground water level and it is doubted that the importation of water from any foreign source would be necessary or economically desirable.

CHAPTER II

PRECIPITATION, STREAM FLOW, WASTE AND IRRIGATED ACREAGE

Precipitation.

Precipitation in Santa Clara Valley, as elsewhere in California, has been subnormal in recent years as will be seen by reference to the plate on page 12, or to Table 2. It will be observed that the periods 1889 to 1931, 1903 to 1926, and 1909 to 1919 were normal as to their cumulative totals of precipitation and that during the 15-year period 1916 to 1931 the average deficiency was over 16 per cent. The cumulative deficiency was equal to almost 2½ years of normal rainfall during the 15 years.

Reference to Table 2 of this report will indicate that precipitation in Santa Clara Valley during the first year of this investigation averaged approximately 82 per cent of normal, during the second year approximately 50 per cent of normal, and during the third year approximately 105 per cent of normal, there being of course considerable variation among the several rainfall stations.

Long term records of daily precipitation are available through the U. S. Weather Bureau for stations at San Jose, Liek Observatory, Los Gatos and Gilroy. The annual records of these stations are shown in Table 2 together with the record of a private observer (Donald J. Ward) near Morgan Hill, the data afforded by the private station being included to 'piece out' the record of the Gilroy Station of the U. S. Weather Bureau which was abandoned in 1915.

Precipitation records of nine private stations in addition to those of Donald J. Ward, were turned over to the Division by cooperative observers whose names are noted below in Table 1. A monthly summary of these data may be found in Appendix B. Table 3 is an annual summary of these same data and the indices of seasonal wetness for

TABLE 1

COOPERATIVE RAINFALL OBSERVERS

Station No.	Names of observers and address
2-I-No. 1	H. H. Ainsworth, Prospect Avenue, Los Altos, California
5-H-No. 2	Arch Nilson, Cupertino, California
5-F-No. 3	V. Rusconi, Lawrence, California
	John Bucher, Lawrence, California
7-H-No. 4	Leroy Anderson, R.F.D. 1, box 294, San Jose, California
8-D-No. 5	E. L. Moody, R.F.D. 2, box 284, San Jose, California
8-J-No. 6	F. W. Knowles, Los Gatos, California
11-E-No. 7	Lyman Lantz, R.F.D. 4, box 172, San Jose, California
17-G-No. 8	C. H. Parker, R.F.D. 4, Morgan Hill, California
22-E-No. 9	H. E. Maggard, Gilroy Hot Springs, California
	George B. Roop, Gilroy Hot Springs, California
17-I-No. 10	Donald J. Ward, Morgan Hill (Paradise Valley), California

TABLE 2

ANNUAL SUMMARY OF PRECIPITATION DATA FURNISHED BY THE UNITED STATES WEATHER BUREAU[1]

NOTE—Under each station opposite each year of record is shown the reported rainfall in inches followed by the per cent of mean for the period of record for the station.

Year	San Jose		Los Gatos		Gilroy		Lick Observatory		Ward 17-I-10		Average of percentages of means
	Inches	Per cent	Inches	Per cent	Inches	Per cent	Inches	Per cent	Inches	Per cent	
1874-75	7 90	55			15.12	75					65
1875-76	19 47	134			31.04	155					144
1876-77	4 83	33			6.53	33					33
1877-78	19 28	133			28.03	140					136
1878-79	16 40	113			16.76	84					98
1879-80	13 77	95			22.38	112					103
1880-81	12.45	86			23.42	117					101
1881-82	11 75	81			14.09	70	29.15	100			84
1882-83	10 59	73			15 19	76	37.26	128			92
1883-84	20 08	139			24 60	123	58 09	199			154
1884-85	11 27	78			14 74	73	44.67	153			101
1885-86	20.63	142	43 02	136	21.45	107	31 42	108			123
1886-87	11.36	78	24 36	77	11 11	55	24 08	82			73
1887-88	12 17	84	24 17	77	16 78	84	30 03	103			87
1888-89	15 71	108	29 87	95	14 44	72	21.85	75			87
1889-90	30 30	209	67.22	213	37.75	188	45.16	155			191
1890-91	12 88	89	31 97	101	14 84	74	24 05	83			87
1891-92	16 51	114	23 11	73	18 91	94	27.49	94			94
1892-93	25 17	174	56 24	178	24 50	122	37 93	130			151
1893-94	12 92	89	21 25	67	12 91	64	35 84	123			86
1894-95	23 32	161	47.18	150	28.81	144	36 61	126			145
1895-96	13 69	94	34 48	109	24 70	123	29.76	102			107
1896-97	16 56	114	32 49	103	21.82	109	32.22	111			109
1897-98	6 87	47	15 18	48	10 44	52	17.66	61	11 62	48	51
1898-99	10 02	69	24 93	79	19 44	97	25 73	88	24 28	100	87
1899-00	13 87	96	24.24	77	14 54	72	29.31	101	20 16	83	86
1900-01	19 88	137	41 35	131	23.17	115	31 64	109	32.13	132	125
1901-02	12 98	90	33 23	105	18 41	92	27 62	95	24 61	101	97
1902-03	13 89	96	28.98	92	17.48	87	30 29	104	23.52	97	95
1903-04	10 47	72	29 25	93	18 26	91	33.78	116	22.19	91	93
1904-05	17 96	124	35 88	114	23 25	116	28.55	98	25 79	106	112

1905-06	15 12	104	38 13	121	29 42	146	38 43	132	35 46	146	130
1906-07	22 71	157	43 42	138	28 98	144	43 34	149	37 10	152	148
1907-08	11 69	81	22 38	71	14 25	71	23 92	82	18 48	76	76
1908-09	18 31	126	44 75	142	27 81	139	37 42	128	34 67	142	135
1909-10	14 52	100	25 78	82	19 47	97	26 02	89	22 32	92	92
1910-11	22 65	156	52 63	167	19 41	97	33 29	114	33 53	138	134
1911-12	10 58	73	19 46	62	13 87	69	18.24	63	16 20	67	67
1912-13	6 35	44	15 53	49	9 75	49	17.88	61	12 55	52	51
1913-14	19 45	134	52 98	168	33 70	168	35 61	122	46 00	189	156
1914-15	22 71	157	36.81	117	21 22	106	27.75	95	31.94	131	121
1915-16	16 31	113	38 53	122			29.48	101	30 79	126	115
1916-17	12 63	87	29 29	93			24.58	84	26 77	110	93
1917-18	9 36	65					15 66	54	13 02	53	57
1918-19	18 87	130	34 55	110			27.40	94	27 59	113	112
1919-20	8 81	61	20 55	65			21 48	74	17.09	70	67
1920-21	15 02	104	33 62	107			31.54	108	24.64	101	105
1921-22	14 77	102	32 28	102			28.65	98	26.09	107	102
1922-23	13 85	96	29 75	94			24 50	84	25.66	105	95
1923-24	6 55	45	11 41	36			11.56	40	8 46	35	39
1924-25	14 24	98	25 67	81			31.44	108	21 42	88	94
1925-26	14 47	100	33 15	105			19 22	66	24 76	102	93
1926-27	13 88	96	33 31	106			(2)		30.28	124	109
1927-28	10 11	70	24 59	78			27 12	93	20 02	82	81
1928-29	10 14	70	17 21	55			23 15	79	16 71	69	68
1929-30	10 83	74	24 67	78			23 09	79	23 56	97	82
1930-31	8.36	58	13 24	42			15.00	51	12 12	50	50
1931-32	13 40	92	29 22	93			31.68	109	30.64	126	105
Totals	840 57		1,451.31		822 79		1,457.64		852 17		
Mean	14 49		31.55		20 07		29 15		24 35		

[1] Data furnished by Donald J. Ward (Station 17-1-10) is included with that of United States Weather Bureau stations to complete the record for Gilroy area where United States Weather Bureau Station was discontinued in 1915.

[2] Record incomplete.

TABLE 3

ANNUAL SUMMARY OF PRECIPITATION AT COOPERATIVE STATIONS

Year	Ainsworth 2-I-No. 1	Nilson 5-H-No. 2	Bueher (Rusconi) 5-F-No. 3	Anderson 7-H-No. 4	Moody 8-D-No. 5	Knowles 8-J-No. 6	Lantz 11-E-No. 7	Parker 17-G-No. 8	Roop (Maggard) 22-E-No. 9
1919-20		10 06	7 93		9 05				
1920-21		17.36	14 08	16.83	15.45				
1921-22		16.81	13.04	15 56	14 61			21.60	
1922-23		15 34	13.62	15.70	17.00			17.59	
1923-24	8 24	6.74	5 78	6 58	8.26			7.50	
1924-25	20 75	16.19	11 01	15.52	12.73			16.62	
1925-26	22 55	17 02	13 39	17 67	15.92			21.05	
1926-27	23 13	17.25	12.47	16 76	13.84			22.04	
1927-28	18 98	11.15	8 69	11.31	11 37			15.59	
1928-29	12 44	9.18	8 31	9 19	10.78	12.35	9.89	14.20	19.39
1929-30	17 34	13.42	11.03	13 01	12 50	17.34	11.32	15 92	20.44
1930-31	13 14	8.70	9.99	9.84	9.92	10 77	[b]7.60	14.02	17.27
1931-32	23 61	16.28	14.85	16 05	13.22	21.65	12.29	22.74	35.29
Totals	160 18	175.50	144 19	164 02	164.65	62 11	33.50	188.87	92.39
Mean	17 80	13.50	11.09	13 67	12.67	15.53	11.17	17.17	23.40
Mean, 1874-75 to 1931-32[a]	22 2	15 9	13 0	15 9	14 9	19.6	12.6	20.4	29.6

[a] This mean is obtained by comparison of the precipitation of the period of record at the cooperative station and the precipitation for the same period at the five United States Weather Bureau stations with the mean precipitation, 1874-75 to 1931-32 of the five United States Weather Bureau stations.

[b] Partial year.

TABLE 3A

SEASONAL INDICES OF WETNESS FOR COOPERATIVE STATIONS

(Estimated by comparing the period of record at each cooperative station with the average of official stations of the United States Weather Bureau for the same period and expanding to the long time average 1874 to 1932.)

Year	Ainsworth 2-I-No. 1	Nilson 5-H-No. 2	Bucher (Rusconi) 5-F-No. 3	Anderson 7-H-No. 4	Moody 8-D-No. 5	Knowles 8-J-No. 6	Lantz 11-E-No. 7	Parker 17-G-No. 8	Roop (Maggard) 22-E-No. 9	Average of per cents of means	
										Cooperative stations	All stations
1919-20		63	61		61					62	65
1920-21		109	108	106	104					107	106
1921-22		106	100	98	98			106		102	102
1922-23		96	105	99	114			86		100	98
1923-24	37	42	44	41	55			37		43	41
1924-25	93	102	85	98	85			81		91	92
1925-26	102	107	103	111	107			103		105	101
1926-27	104	108	96	105	93			108		102	104
1927-28	85	70	67	71	76			76		74	77
1928-29	56	58	64	58	72	63	78	70	66	65	66
1929-30	78	84	85	82	84	88		78	69	82	82
1930-31	59	55	77	62	66	55		69	58	63	58
1931-32	106	102	114	101	89	110	97	111	119	105	105

these stations prepared by comparing the period of record available at each station with a similar period for the long term stations shown in Table 2 and expanding for the longer period of record shown in Table 2. The daily records of precipitation at these private stations may be consulted in the office of the Division of Water Resources but are not reproduced in this report.

Available Stream Flow Records.

In addition to the records of occasional measurements made by Tibbetts and Kieffer and this office for the purpose of determining percolation losses, which occasional measurements are described elsewhere in this report, there are records available of stream flow into Santa Clara Valley covering considerable periods of time.

By the courtesy of H. L. Haehl, consulting engineer of San Francisco, heretofore unpublished records of measured flow of Coyote River at Coyote, Ford Road, and Julian Street for the years 1903 to 1907 and at Madrone for the years 1912 to 1914 are made available in Appendix C.

Records of the flow of Coyote River as measured by Mr. Haehl at Coyote and at Madrone during the period 1902 to 1912 have heretofore been publishd by the U. S. Geological Survey in Water Supply Paper 519, and a complete record of the measured flow of Coyote River at Madrone and Edenvale is available through the U. S. Geological Survey for the years 1917 to date, and at Coyote for the years 1917 to 1923.

Immediately following the inception of this investigation continuous recording gaging stations were established by the U. S. Geological Survey, cooperating with this office, at the following points:

Alamitos Creek near Edenvale.
Guadalupe River near Guadalupe.
Guadalupe River at San Jose.
Los Gatos Creek at Los Gatos.
Stevens Creek near Cupertino.

Records of the flow at these stations may be obtained through the office of the U. S. Geological Survey.

For the purpose of obtaining measurements of flow in minor streams at points where they debouch into the valley and at points below where percolation was likely to occur a number of staff gages were established and gagings made for a reasonably sufficient rating in 1932. These temporary stations are as follows:

(a) San Antonio Creek at Los Altos.
(b) San Antonio Creek at San Francisco Highway.
(c) San Antonio Creek at Middlefield Road.

(a) Permanente Creek at Cupertino-Saratoga Road.
(b) Permanente Creek at San Francisco Highway.
(c) Permanente Creek at Charleston Road.

(a) Stevens Creek at Homestead Road.
(b) Stevens Creek at San Francisco Highway.
(c) Stevens Creek near Whisman School.

(a) Calabazas Creek at Cupertino-Saratoga Road.

(a) Campbell Creek at Cupertino-Saratoga Road.
(b) Campbell Creek near Alviso.

(a) San Tomas Creek-Main Channel at Pollard Road.

(a) San Tomas Creek at Stevens Creek Road.

(a) West Fork of Wildcat Creek at Fruitvale (Odd Fellows) Ave.

(a) East Fork of Wildcat Creek at Allendale Ave.

(a) West Fork of Smith Creek at Pollard Road.

(a) East Fork of Smith Creek at Pollard Road.

(a) Silver Creek at Loup Ave.

(a) Dry Creek near Evergreen.
(b) Silver-Dry Creek at East Santa Clara Street, San Jose.

(a) Penitencia Creek at Upper Station.
(b) Penitencia Creek at Capitol Ave.
(c) Penitencia Creek at Lower Station.

(a) Berryessa Creek at Piedmont Road.
(b) Berryessa Creek at Oakland Highway.
(c) Berryessa Creek at Milpitas.

Of this list of stations those preceded by the designation "a" were established as far upstream as practicable for a determination of the surface inflow to the valley; those designated "b" were intended to measure the flow below all diversions where the measurement would be determinative of the surface outflow from the valley into San Francisco Bay but it was later found necessary in some cases to establish stations further downstream because of local contributions due to precipitation on the valley floor, and these later stations are designated "c." The location of all stations is shown upon the general map which will be found in the pocket attached to the back cover of this report and a record of the measurements, expanded in so far as practicable by comparison with nearby stations may be found in tables 6 and 7, the records for the "a" stations being expanded on a percentage basis by comparison with the monthly total flow at the Cupertino, Los Gatos, Guadalupe, Edenvale (on Alamitos Creek) and Madrone Stations and the records of the "b" and "c" stations being expanded by a similar comparison with the monthly total flow at the San Jose, Edenvale (on Coyote River) and Alviso Stations.

During the season of 1931-32 there were probably more diversions made from the streams entering the valley than in any other recent year. These diversions varied in character from the large permanent ditches to semiportable pumping outfits and hastily constructed dams of planks, brush and debris. With the exception of the upper station on Penitencia Creek some diversions occurred above all stations. The lower stations are below all diversions with the exception of Silver-Dry Creek where a small amount of diversion occurred in the last few hundred yards above its junction with Coyote River.

TABLE 4

COMPARISON OF MONTHLY DISCHARGES OF VARIOUS SANTA CLARA VALLEY STREAMS AT UNITED STATES GEOLOGICAL SURVEY GAGING STATIONS DURING PERIOD OF THE INVESTIGATION

Month	Discharge in acre-feet at entrance to valley						Discharge in acre-feet below principal percolating areas	
	(1) Coyote River at Madrone	(2) Alamitos Creek near Edenvale	(3) Guadalupe River at Guadalupe	(4) Los Gatos Creek at Los Gatos	(5) Combined flow Alamitos Creek, Guadalupe River, Los Gatos Creek	(6) Stevens Creek near Cupertino	Coyote River near Edenvale	Guadalupe River at San Jose
1930								
January	1,900	577	885	2,880	4,342	531	143	70 7
February	2,120	355	454	1,510	2,319	432	35 5	0
March	14,800	5,910	3,170	10,300	19,380	2,180	8,850	12,900
April	690	466	321	857	1,644	290	0	0
May	318	25	211	290	524	197	0	0
June	151	0	74	32	106	49	0	0
July	60	0	12	3	15	18	0	0
August	25	0	0	0	0	4	0	0
September	15	0	0	0	0	0	0	0
Totals	20,100	7,300	5,100	15,900	28,300	3,700	9,030	13,000
1930–31								
October	6 8	0	6 1	6 1	12 2	0	0	0
November	10 7	0	59 5	58 9	118	12 5	0	0
December	22 8	0	36 9	32 0	68 9	49 2	0	0
January	239	0	291	756	1,050	340	0	0
February	800	0	103	81 1	184	145	0	0
March	359	0	126	108	234	150	0	0
April	144	0	63 1	19 6	82 7	50 6	0	0
May	63 3	0	21 5	25 2	46 7	24 3	0	0
June	20 2	0	7 7	4 2	11 9	8 9	0	0
July	0	0	0	0	0	0	0	0
August	0	0	0	3 7	3 7	0	0	0
September	0	0	0	0	0	0	0	0
Totals	1,670	0	715	1,100	1,810	781	0	0

1931–32								
October	0	0	2.8	0	2.8	0	0	0
November	0	0	20.2	113	133	0.4	0	0
December	26,400	7,750	3,860	11,700	23,310	2,210	25,000	19,100
January	11,900	3,200	1,640	5,240	10,100	1,140	6,150	2,840
February	27,300	5,810	2,440	8,920	17,200	2,130	25,200	10,200
March	2,070	842	427	1,520	2,790	558	0	0
April	970	92.8	236	637	966	311	0	0
May	627	0	122	187	309	152	0	0
June	292	0	43.6	28	71.6	67.8	0	0
July	139	0	7.6	0	7.6	12.7	0	0
August	67.6	0	0	0	0	5.5	0	0
September	27.8	0	0	0	0	0	0	0
Totals	69,800	17,700	8,800	28,300	54,900	6,590	56,400	32,100

Estimated average seasonal runoff during a normal period—

(1) 71,000 acre-feet.
(2) 17,000 acre-feet.
(3) 8,500 acre-feet.
(4) 30,000 acre-feet.
(5) 55,000 acre-feet.
(6) 7,600 acre-feet.

TABLE 5

SEASONAL RUN-OFF IN ACRE-FEET FROM FOOTHILL AND MOUNTAIN DRAINAGE AREAS TRIBUTARY TO SANTA CLARA VALLEY

NOTE— Coyote River run-off measured for all years except 1914 to 1916; Stevens Creek, Los Gatos, Guadalupe and Alamitos run-off measured in 1930, 1931 and 1932; remainder estimated. Figures given for Coyote River during the years 1902 to 1912 are the annual totals taken from U. S. G. S. water supply paper 519, except in the case of the year 1909-10, where the annual total was recomputed to agree with the mean monthly flow.

Season	Stevens Creek	Los Gatos Creek	Guadalupe River	Alamitos Creek	Minor west side streams	Coyote River	Minor east side streams	Totals
1902-03	8,700	34,800	9,900	20,100	22,000	83,200	22,000	200,700
1903-04	4,300	24,800	6,800	11,200	9,100	35,800	3,800	95,800
1904-05	3,900	23,800	6,500	10,300	8,100	31,800	3,000	87,400
1905-06	11,900	41,800	12,100	26,200	31,100	117,000	36,900	277,000
1906-07	20,000	59,800	17,800	42,000	54,700	204,000	75,300	473,600
1907-08	5,300	27,400	7,600	13,600	12,200	47,200	6,600	119,900
1908-09	17,500	54,200	16,000	37,000	47,100	176,000	63,300	411,100
1909-10	5,700	28,200	7,800	14,300	13,300	51,100	7,900	128,300
1910-11	12,700	43,700	12,700	27,900	33,600	126,000	40,900	297,500
1911-12	1,500	9,400	2,200	2,400	1,200	6,400	100	23,200
1912-13	1,200	6,400	1,500	1,200	500	3,800	0	14,600
1913-14	18,700	56,800	16,800	39,300	50,800	189,000	68,900	440,300
1914-15	12,300	42,700	12,400	27,000	32,300	121,000	38,800	286,500
1915-16	15,300	49,400	14,500	32,800	40,800	153,000	53,000	358,800
1916-17	7,500	32,200	9,100	17,700	18,500	70,200	16,300	171,500
1917-18	2,200	15,300	4,000	5,300	3,000	13,400	500	43,700
1918-19	5,400	27,400	7,600	13,600	12,300	47,500	6,700	120,500
1919-20	2,200	15,800	4,100	5,500	3,200	14,000	700	45,500
1920-21	6,200	29,400	8,200	15,300	14,800	56,800	10,300	141,000
1921-22	7,400	31,900	9,000	17,500	18,100	69,100	15,800	168,300
1922-23	5,700	28,100	7,800	14,200	13,200	50,700	7,800	127,500
1923-24	500	2,100	300	0	0	900	0	3,800
1924-25	2,100	15,200	3,900	5,200	3,000	13,200	500	43,100
1925-26	4,700	26,000	7,100	12,100	10,400	40,300	4,700	105,300
1926-27	5,900	28,600	8,000	14,700	13,900	53,300	8,800	133,200
1927-28	3,000	20,400	5,500	8,000	5,500	22,500	1,500	66,400
1928-29	1,600	10,100	2,500	2,900	1,400	7,200	200	26,200
1929-30	3,700	19,200	5,100	7,300	4,900	20,100	1,200	61,500
1930-31	800	2,900	700	0	0	1,700	0	6,100
1931-32	6,600	31,400	8,800	17,700	18,400	69,800	16,100	168,800
Average 30-year period, 1902-32	6,800	28,000	7,900	15,400	16,600	63,200	17,000	155,000
Average normal period, 1903-26	7,600	30,000	8,500	17,000	19,000	71,000	20,000	173,000

The incapacity of the existing stream channels to care for the run-off incident to heavy or long continued precipitation in the mountain areas was amply demonstrated during the season of 1931-32. This is caused by brush growth, the dumping of refuse and the filling in and plowing over of certain channels, and though common to all was most marked on the three streams of the Campbell Creek system from Homestead Road to Agnew, on the Silver-Dry Creek system from Tully Road to Stony Road and on Berryessa Creek from Morrill Road to Milpitas and was least in evidence on Peniteneia Creek. These three regions (exclusive of the Peniteneia Cone) were inundated by streams overflowing their banks during each of the heavier storms. The Agnew-Alviso territory was submerged by the overflow of Guadalupe River below Brokaw Road, combined with that from Campbell Creek. Some three or four square miles adjacent to Cupertino on the southeast was also inundated due to local run-off from the hillsides rather than the overflow from streams. The inundated region between Tully Road and Stony Road received heavy contributions from the hills to the east, though the water from Silver-Dry Creek was sufficient to flood the district.

The run-off recorded at the following gaging stations does not represent the discharge of the streams during high stages due to overflow of banks above the stations.

Campbell Creek near Alviso.
Silver-Dry Creek at East Santa Clara Street
Berryessa Creek at Milpitas.
Berryessa Creek at Oakland Highway.

Estimates of Surface Flow Entering Santa Clara Valley.

Available records of stream flow entering Santa Clara Valley, as noted above, with records of the discharge of Alameda Creek at Sunol Dam obtained from the U. S. Geological Survey, have been used to estimate the surface inflow entering the valley. A summary of these estimates will be found in Table 5.

Two methods were tested as a check one against the other in estimating the mean annual run-off of Coyote River at Madrone during the periods without available records. In the first method available records were expanded by comparison of the indices of seasonal wetness taken from Table 2. In the second method available records were expanded by comparison with records of discharge of Alameda Creek at Sunol. The latter method gave results more nearly consistent with the measured records and was therefore adopted.

Three methods were tested in expanding the run-off records of Stevens, Los Gatos, Guadalupe and Alamitos Creeks; first by comparison of indices of seasonal wetness at a group of precipitation stations on the west side of Santa Clara Valley; second by comparison with the

flow of Alameda Creek at Sunol Dam; third by comparison with the flow of Coyote River at Madrone. The second and third methods gave very similar results and therefore the run-off of Stevens, Los Gatos, Guadalupe and Alamitos Creeks was estimated by comparison with the flow of Coyote River at Madrone during the period 1902 to 1932.

The records of measured flow in those minor streams of the valley described under "Available Stream Flow Records" were expanded for the year 1931–1932 by comparison with the complete records on Coyote and Guadalupe Rivers and Alamitos, Los Gatos and Stevens Creeks. The relation of the rate of run-off during the year 1931–1932 to the average elevation of the watershed was then analyzed and it was found that run-off was affected not alone directly by the average elevation of the watershed but apparently by some uncertain factor indicated by position in the valley—the run-off being lightest on the east side including the Coyote River, next lightest on the extreme northwest including Stevens Creek, next heaviest on the southwest including the Calabazas and Campbell Creeks, and heaviest on the south including Los Gatos, Guadalupe, and Alamitos Creeks. Verification of the estimates of light run-off on the extreme northwest was found in the records of measured run-off of San Francisquito Creek, and it is probable the heavy run-off on the south is due to the situation of these watersheds adjacent to passes through the Coast Range.

The run-off of the remaining minor drainage areas feeding into the valley was estimated for the year 1931–1932 by comparison with run-off of the larger streams of the same group, for which some records were available, taking into account average elevation of watershed as well as position as to one or the other of the four groups referred to above.

All minor streams of the valley were then thrown into two groups, those east of Coyote River, and those west of Coyote River, and the annual run-off of each of these two groups was estimated as a whole. The 42-year period 1889 to 1931 and the 23-year period 1903 to 1926 were each normal as to rainfall, it will be observed by reference to the plate on page 12 and it was found that the estimated mean run-off of Coyote River for the 42-year period differed only very slightly from the mean of the 23-year period 1903 to 1926 for which the discharge was measured in all years except two. The mean annual run-off of the minor streams entering the valley was accordingly estimated by comparison with the Coyote River during these 23 years.

Surface Waste From Santa Clara Valley Streams.

By expansion of the records of measured flow in Coyote River at Edenvale it is practicable to form some fairly approximate estimate of the annual waste which Coyote River discharges into San Francisco Bay, and by comparison of the records of discharge at Edenvale in the

season 1931–32 with those of the discharge of other valley streams into San Francisco Bay, which discharge was for the most part measured during that season, it is possible to make an approximate estimate of the long term average of waste from all streams. The measured waste of Guadalupe River at San Jose during the period January 1, 1930 to April 1, 1933 assists to a conclusion in the matter because it will be observed by reference to Table 7 the combined waste of these two streams approximated 88 per cent of the total in 1931–32.

While there is some percolation and some surface and other accretion on Coyote River below Edenvale it would appear that these are relatively unimportant and therefore the recorded flow at Edenvale gaging station may be taken as fairly representative of the surface waste of this stream. The record has been expanded to cover the period 1902 to 1932 by comparison with the Madrone record, with due allowance for inflow and accretions, as shown in Table 10. It would appear that Coyote River during the past 30 years has wasted an average of 48,000 acre-feet annually into San Francisco Bay and that the average waste over a period of normal precipitation (1903 to 1926) approximates 55,000 acre-feet per year, or 3 per cent less than the measured waste in 1931–32.

The discharge of Guadalupe River at San Jose may likewise be taken as fairly representative of the waste of that stream, including Alamitos and Los Gatos Creeks, into San Francisco Bay. During the period January 1, 1930, to March 31, 1933, which includes substantially four years of run-off, the flow at San Jose on the Guadalupe River approximated 67 per cent of that at Edenvale on the Coyote River. Assuming that this percentage represents fairly well the long term relation of the waste of the two streams the average waste of Guadalupe River, during a period of normal rainfall, would approximate 37,000 acre-feet per year, or 15 per cent more than the measured waste in 1931–32.

In the absence of any other basis for an estimate it may be assumed that the normal relation of total waste from other surface streams of the valley is to that of the combined waste from Coyote River and Guadalupe River as in the season 1931–32. The average waste from these minor streams over a period of normal precipitation under such an assumption would approximate 12,000 acre-feet, and the combined total waste from all streams entering the valley would, over a period of normal rainfall, approximate 104,000 acre-feet annually, but a portion of this of course accrues too low down to be conserved by any known practicable means.

TABLE 6

FOOTHILL AND MOUNTAIN RUN-OFF IN ACRE-FEET TRIBUTARY TO SANTA CLARA VALLEY SEASON OF 1931-1932

(See Note c Below)

Stream	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Total
San Antonio Creek at Los Altos	0	0	[a]473	[a]219	460	47.3	11.9	3.0	0	0	0	0	1,210
Permanente Creek at Loyola	0	0	[a]679	[a]313	562	178	9.5	0	0	0	0	0	1,740
Stevens Creek near Cupertino	0	0.4	2,210	1,140	2,130	558	311	152	67.8	12.7	5.5	0	6,590
Calabazas Creek at Cupertino-Saratoga Road	0	0	[a]441	[a]203	484	0	0	0	0	0	0	0	1,130
Campbell Creek at Cupertino-Saratoga Road	0	0	[a]2,480	[a]1,140	1,830	302	227	240	134	0	0	0	6,350
West Fork Wildcat Creek at Fruitvale Avenue	0	0	[a]202	[a]93	205	18.4	0	0	0	0	0	0	519
East Fork Wildcat Creek at Allendale Avenue	0	0	[a]182	[a]84	201	0	0	0	0	0	0	0	467
San Tomas Creek at Pollard Road	0	0	[a]510	[a]236	399	60.2	46.4	40.1	6.5	0	0	0	1,300
West Fork Smith Creek at Pollard Road	0	0	[a]165	[a]76	182	0	0	0	0	0	0	0	423
East Fork Smith Creek at Pollard Road	0	0	[a]78.8	[a]36.4	86.8	0	0	0	0	0	0	0	202
Los Gatos Creek at Los Gatos	0	113	11,700	5,240	8,920	1,520	637	187	28	0	0	0	[b]28,300
Guadalupe River at Guadalupe	2.8	20.2	3,860	1,640	2,440	427	236	122	43.6	7.6	0	0	8,800
Alamitos Creek near Edenvale	0	0	7,750	3,200	5,810	842	92.8	0	0	0	0	0	17,700
Coyote River at Madrone	0	0	26,400	11,900	27,300	2,070	970	627	292	139	67.6	27.8	69,800
Silver Creek at Loup Avenue	0	0	[a]66.7	[a]30.8	73.6	0	0	0	0	0	0	0	171
Dry Creek near Evergreen	0	0	[a]110	[a]50.6	121	0	0	0	0	0	0	0	281
Penitencia Creek at Upper Station	0	0	[a]3,250	[a]1,500	2,550	318	317	357	34.5	0	0	0	8,330
Berryessa Creek at Piedmont Road	0	0	[a]389	[a]180	341	46.1	22.6	18.4	0.6	0	0	0	1,000
Totals	2.8	133.6	60,946.5	27,271.8	54,095.4	6,387.0	2,881.2	1,746.5	607.0	159.3	73.1	27.8	[c]154,000

[a] Estimates based on comparison with monthly distribution of seasonal foothill and mountain runoff of measured stations.
[b] This figure does not include diversions made by San Jose Water Co.
[c] This does not include run-off below upper gaging stations or from minor drainage areas.

TABLE 7

WASTE FROM SANTA CLARA VALLEY STREAMS IN ACRE-FEET FOR SEASON OF 1931-32

Stream	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Total
San Antonio Creek at Middlefield Road	0	0	[a]441	[a]88.2	347	6 2	0	0	0	0	0	0	[a]882
Permanente Creek at Charleston Road	0	0	[a]153	[a]30.7	123	0	0	0	0	0	0	0	[a]307
Stevens Creek near Whisman School	0	0	[a]1,160	[a]231	924	0	0	0	0	0	0	0	[a]2,310
Campbell Creek near Alviso	0	0	1,570	468	1,590	38.7	21.4	15.4	0	0	0	0	3,700
Guadalupe River at San Jose	0	0	19,100	2,840	10,200	0	0	0	0	0	0	0	32,100
Coyote River near Edenvale	0	0	25,000	6,150	25,200	0	0	0	0	0	0	0	56,400
Silver-Dry Creek at East Santa Clara Street	0	0	108	97.8	433	0	0	0	0	0	0	0	639
Penitencia Creek at Lower Station	0	0	[a]1,460	[a]292	1,170	0	0	0	0	0	0	0	[a]2,920
Berryessa Creek at Piedmont Road[b]	0	0	[a]535	[a]107	341	46.1	22.6	18.4	0.6	0	0	0	[a]1,070
Totals	0	0	49.500	10,300	40,300	91 0	44.0	33.8	0.6	0	0	0	[a]100,000

[a] Estimates based on comparison with monthly distribution of seasonal runoff at measured stations of Santa Clara Valley streams situated below diversions and valley percolation.

[b] Berryessa Creek at Oakland Highway and at Milpitas overflows its banks at high stages, therefore, the discharge at Piedmont Road is used for this tabulation, the diversions are presumed to be compensated for by contributions.

Subsurface Outflow From the Basin.

Reference to the contour map of ground water levels as of December 1932 which is to be found in the pocket attached to the back cover of this report, and to similar maps for recent earlier years which may be consulted in the office of the Division, will indicate that the general level of ground water in San Clara Valley for some miles back from the shore of San Francisco Bay is at or below sea level. At the close of the irrigation season it has dropped during each of the past three years to more than 20 feet below sea level between Campbell and Mountain View. Under such circumstances it is not expected that there presently is any appreciable waste underground from Santa Clara Valley basin. In fact there is a possible danger that ultimately the flow may be reversed and an incursion of salt water occur unless the recession in ground water level is arrested.

Irrigated Acreage.

In 1930 Mr. Leroy Anderson, president of the Santa Clara Valley Water Conservation District, made a canvass of the various cooperative marketing associations of Santa Clara Valley and from their reports estimated that approximately 95,000 acres were then irrigated in that District.

The Tibbetts-Kieffer report referred to above indicates 86,042 acres irrigated in 1920 within the tentative boundaries of the proposed Santa Clara County Irrigation District, with a further area of 41,170 acres susceptible of irrigation but not yet irrigated. A comparison of their data with the 'irrigation map' of 1920 prepared by the U. S. Department of Agriculture in cooperation with the University of California, the California State Department of Irrigation, and the California State Water Commission indicates that there were some 5000 acres irrigated within the boundaries of the proposed District of 1920 which lie outside the boundaries of the present District.

Figures of the U. S. Bureau of the Census indicate that the irrigated area in Santa Clara County increased from 70,312 acres in 1919 to 96,130 acres in 1929 or roughly 37 per cent. It is believed that this area has remained substantially constant since 1929.

Based upon these meager data it is assumed that roughly speaking 100,000 acres within Santa Clara Valley Water Conservation District and adjacent thereto now depend in whole or in part for their irrigation supply upon the underlying ground water storage basin.

CHAPTER III

GROUND WATER

The Draft Upon Ground Water.

Diversions for irrigation and domestic use from surface streams within the valley floor are relatively unimportant because of the short duration of flow in these streams, irrigation and domestic supplies in Santa Clara Valley being drawn for the most part from ground water. A record of the draft of San Jose Water Company, which supplies most of the urban and some of the rural draft for domestic purposes, will be found in Table 8. There is no measurement of the draft for irrigation use and for the purpose of estimate one must rely either upon an assumed duty for irrigated crops or upon an assumed relation of draft for this use to the agricultural power load.

H. L. Haehl in his review of F. H. Tibbetts "Report on Water Salvage Project" to the Board of Directors of Santa Clara Valley Water Conservation District in October 1931 presents figures for power consumption in San Jose District obtained from Pacific Gas and Electric Company and these have been supplemented for the ensuing years through the kindness of P. M. Downing, vice president and general manager of that company, who advises that the agricultural power load in this area in 1931 was 49,024,000 kilowatt hours and in 1932, 35,832,000 kilowatt hours. Assuming that this load is uniformly distributed throughout that portion of the valley in which the wells under observation by the Division are located; that the static pumping lift has varied each year from that of 1932 as the fluctuation in general ground water elevation has varied; that an increment of 35 feet must be added to this pumping lift to cover 'draw-down,' friction losses, and height of delivery above ground surface; and that the over-all efficiency of pumping plants is 50 per cent; an estimate has been made of the annual pumping draft upon the ground water basin for irrigation uses.

While these assumptions are a matter of judgment and opinions with respect thereto will differ, nevertheless it is believed they make possible an estimate which, if not strictly accurate for any given year, is nevertheless fairly accurate for comparative purposes one year with another. The estimate thus made is shown in Table 8. It appears that the total pumping draft upon the ground water supply increased from 25,000 acre-feet per annum in 1915 to an average of 134,000 acre-feet per annum the last five years, and that present duty for irrigation purposes is approximately 1.3 acre-feet per acre per annum. Years of subnormal rainfall such as 1923–24, 1928–29, and 1930–31 show quite apparent increases in pumping draft as will be observed by reference to the plate on page 12 and tables 2 and 8.

TABLE 8

ESTIMATED PUMPING DRAFT ON GROUND WATER BASIN OF SANTA CLARA VALLEY

(See also plate on page 12)

Year	Acre-feet per annum		
	[a]By San Jose Water Co.	[d]For irrigation	Total
1915	[a]1,200	23,400	25,000
1916	[a]1,700	36,300	38,000
1917	[a]2,500	47,600	50,000
1918	[a]3,200	62,600	66,000
1919	[a]2,900	66,800	70,000
1920	[b]2,900	84,700	88,000
1921	[b]2,700	103,000	106,000
1922	[b]2,900	87,800	91,000
1923	[c]2,600	85,000	88,000
1924	[c]5,900	134,000	140,000
1925	[c]3,600	108,000	112,000
1926	[c]2,900	105,000	108,000
1927	[c]2,700	108,000	111,000
1928	[c]3,000	117,000	120,000
1929	[c]5,900	140,000	146,000
1930	[c]4,600	122,000	127,000
1931	[c]7,000	152,000	159,000
1932	[c]4,500	115,000	120,000

[a] From W. S. Paper 519, U. S. G. S., p. 87.
[b] Estimated.
[c] From records of the San Jose Water Company.
[d] Estimated from records of power consumption for agricultural purposes furnished by Pacific Gas & Electric Company.

The Increasing Depth to Ground Water.

In 1914, 1915 and 1916 the United States Geological Survey took the depth to ground water in some 1000 wells fairly well distributed throughout Santa Clara Valley as far south as Madrone, the records for which are available in Water Supply Paper 519. Again in 1920-21 Tibbetts and Kieffer took the depth to ground water in a greater number of wells, likewise fairly well distributed throughout this area, and Mr. Tibbetts has made the records of these measurements available to the Division. Since the inception of this investigation the Division has itself taken the depth in some 260 wells in this area immediately before pumping for irrigation started each spring and as promptly as practicable after pumping for irrigation ceased each fall. With these data and the continuous records made available to the Division for intervening periods in a few wells it has been possible to plat with a fair degree of accurracy a hydrograph showing the general fluctuation of ground water level in Santa Clara Valley at the close of each irrigation season since 1915.

On page 12 there may be found a plate on which is shown not only this hydrograph but a residual mass diagram of rainfall and a graphic representation of the estimated pumping draft based upon power consumption. It will be observed by reference to this plate that there has been a gradual but very marked recession in ground water level in Santa Clara Valley since 1915, interrupted only during those

periods when rainfall was at or above normal. The net [1] recession in ground water level outside the artesian zone and north of Coyote Station, during the 18-year period (Spring of 1915 to Spring of 1933) as determined from contour maps of ground water elevation, amounts to a net total of 95 feet, or an average of slightly more than 5 feet per year, but during the years 1915–16, 1920–23, 1925–27, and 1931–32, when precipitation was normal or slightly above, the hydrograph indicates some recovery of ground water level. The year 1918–19 appears to be the only exception to the rule that ground water rose whenever precipitation was at or above normal, and the reason is not clear, but it is worthy of observation that in this year one-third of the total precipitation occurred in a single period of four days.

The Recession in Ground Water Storage.

A change in the water level of an underground storage basin is inevitable whenever the conditions of draft or replenishment are disturbed and therefore a recession in ground water level does not necessarily indicate an overdraft; i.e., a pumping draft which exceeds the replenishment. For any given set of conditions as to draft and replenishment a certain level of the ground water is ultimately established and will thereafter be maintained. If draft exceeds replenishment the reserve storage will ultimately become exhausted. If replenishment exceeds draft the storage in reserve will increase until spill or waste from the basin occurs. As the excess of replenishment over draft increases the ground water in the basin continues to rise until a position is reached where the gradient (i.e., slope) of the ground water surface between points of recharge and points of discharge is just sufficient to cause the flow required to waste the excess. When the excess of replenishment over draft is reduced then ground water falls and this gradient is again reduced until a new balance is struck at which waste will again equal the difference between replenishment and draft. The fact that there has been a recession of the ground water level in Santa Clara Valley in recent years therefore does not in itself prove that the draft under normal conditions will over a period of years exceed replenishment. The water level would have fallen in Santa Clara Valley in recent years had there been no pumping and it may be expected to rise again when a series of years of normal rainfall occurs in spite of the pumping. It will not, however, rise to its former level because of the increased pumping.

The water in an underground storage basin is held between the particles of gravel, sand and clay and not only the capacity of any given

[1] The recession in general ground water level as determined by comparison of contour maps of ground water elevation differs from that estimated by comparison of the average depth to ground water in the wells due to the unevenness in distribution of wells throughout the valley.

TABLE 9

FLUCTUATION OF GROUND WATER IN SANTA CLARA VALLEY SHOWING CHANGES IN GENERAL LEVEL AND APPROXIMATE CHANGES IN STORAGE, 1915 TO 1933

Area	Spring of 1915 to Spring of 1921	Spring of 1921 to Spring of 1933	December, 1930, to December, 1931	December, 1931 to Spring of 1932	Spring of 1932 to December, 1932	December, 1932, to Spring of 1933
Zone A.						
Area=32,100 acres.						
Recession or rise in feet	−4.6	−37.4	−2.7	+8.4	−8.9	+6.0
	Elevation of water surface in flowing wells is assumed the same as ground surface and the changes of elevation of water surface in Zone A are taken to reflect a change in pressure only and little or no change in storage. (See page 36.)					
Group I. Zone B. C.						
Area=12,000 acres.						
Recession or rise in feet	−11.5	−58.9	−7.9	+4.7	−5.9	+2.2
Acre-feet recession or rise	11,000	−58,000	−7,800	+4,600	−5,800	+2,200
Group I. Zone D. E.						
Area=20,000 acres.						
Recession or rise in feet	−31.0	−125.9	−13.1	+13.1	−10.5	+4.3
Acre-feet recession or rise	45,000	−180,000	−19,000	+19,000	−15,000	+6,200
Group II, Zone B. C.						
Area=16,800 acres.						
Recession or rise in feet	−26.1	−61.7	−13.4	+25.6	−21.7	+8.1
Acre-feet recession or rise	53,000	−120,000	−27,000	+52,000	−44,000	+16,000
Group II, Zone D. E.						
Area=12,800 acres.						
Recession or rise in feet	−24.0	−42.9	−11.6	+39.7	−24.0	+7.4
Acre-feet recession or rise	26,000	−47,000	−13,000	+44,000	−26,000	+8,100
Group III						
Area=6,300 acres.						
Recession or rise in feet	−19.0	−47.5	−17.4	+22.9	−8.7	+2.5
Acre-feet recession or rise	14,000	−36,000	−13,000	+17,000	−6,600	+1,900
Group IV, Zone B. C.						
Area=12,200 acres.						
Recession or rise in feet	−23.0	−57.3	−8.6	+4.9	−4.8	+1.1
Acre-feet recession or rise	32,000	−79,000	−12,000	+6,800	−6,600	+1,500
Group IV, Zone D. E.						
Area=4,900 acres.						
Recession or rise in feet	−26.7	−46.5	−8.1	+10.6	−1.1	−3.5
Acre-feet recession or rise	−10,000	−18,000	−3,200	+4,200	−430	−1,490
Valley as whole, excluding Zone A						
Area=85,000 acres.						
Recession or rise in feet	−24.0	−70.9	−11.6	+17.8	−12.6	+4.3
Acre-feet recession or rise	−191,000	−538,000	−95,000	+148,000	−104,000	+35,000

volume but also the rate at which it will absorb or yield water is dependent upon the coarseness and gradation of the particles. In order to estimate the capacity of an underground storage basin, or what the changes in water level therein actually represent in the way of storage increment or decrement, it is therefore necessary to establish not only the gross volume of the basin affected by the change, but the specific yield thereof; i.e., the relation of the amount of water given up and recovered by the voiding and replenishment to the volume of alluvial fill affected.

In order to establish specific yield the logs of 112 wells fairly well distributed throughout the surface area of the ground water basin were *analyzed, particularly with reference to the 100 feet of their depth lying within the zone affected by changes in water level in recent years, the material being classified into seven groups as follows: clay, sandy clay, gravelly clay, light or fine sand, sand, tight gravel, and gravel.

There is considerable lack of uniformity in the materials and structure forming the underground storage basin of Santa Clara Valley, arising out of the origin thereof and the conditions of deposit. To properly evaluate these variations the basin was divided into zones and again into groups which are shown upon the contour maps of water levels accompanying this report. Zone A, on the basis of distribution of thick clay blankets and former artesian conditions, is considered to be a pressure area. Zone BC is marginal between the pressure area and the nonpressure area. During periods of high water level the pressure area extends out into this zone, and in places may almost cross it. In general, changes in Zone BC probably represent changes of storage. Zone DE is the outer zone, nearest the valley margin and probably lies wholly outside the pressure area even during periods of high water level, so that changes of water level represent changes of storage in this zone.

The area was divided also into four groups. Group I lies west of San Tomas Creek and comprises the alluvial cones of the small streams northwest of Los Gatos Creek. Group II comprises the alluvial cones of Los Gatos Creek, Guadalupe River, and a small part of Coyote cone between San Jose and the hills on the west side of the river. Group III comprises the Coyote cone above the narrows at Lick Station. Group IV comprises the area between Coyote River and the hills along the northeast side of the valley.

It is believed that in typical gravel cone deposits formed under conditions of deposition comparable to those of Santa Clara Valley, little sand and practically no clay is deposited on the upper slopes, which correspond roughly to the area outside the pressure zone in the

* By Rollin Eckis, Assistant Engineer, Geologist of the Division Staff.

Santa Clara Valley. The original deposits contain practically nothing but sand and gravel. The tight gravel, gravelly clay, and clay are derived by alteration of the gravels. It is believed that every gradation exists between the yield of good unaltered gravel and true clay which has no yield. The relative yields were accordingly divided equally, clay being placed at one end of the series with a relative yield factor of 0 and gravel being placed at the other end with a relative yield factor of 3.

The relative yields thus determined for the various zones were further modified by a location factor to correct for the difference in yield between materials of the same classification located in the BC and DE zones, because of the increase in yield as the slope of the alluvial cone flattens, a location factor of 4 being given to the BC zone and a location factor of 3 being given to the DE zone.

Group III for which no logs were available and no relative yield values were computed, appears to be more similar to the adjacent Zone BC, than to Zone DE, and therefore its relative yield probably approaches that of Zone BC.

Tentative estimates were made for the specific yield values in the various zone groups by making use of values determined for alluvial materials in the South Coastal Basin where an exhaustive study by the Division is now being concluded. The specific yields for the various zone groups thus determined were then applied to the gross volume of alluvial fill saturated or voided as the water level raised or lowered between successive readings of the wells, the gross volume thus saturated or voided being determined, as stated above, by comparison of the ground water contour maps rather than by averaging the depths to water in the various wells.

Zone A being artesian the fluctuations of ground water levels therein have been taken as significant of changes in pressure and not as significant of changes in ground water storage. It is true there appears to have been an actual long time depletion of the stored water in the upper strata of Zone A, accompanying the reduction in the pressure beneath, but this must have been small and estimation of storage changes would necessarily require information as to the fluctuation of water levels in shallow wells which is not available.

There is also some fluctuation in ground water storage between Zone DE and the hills for which no estimate can be made because of lack of information as to water levels in wells of that area.

Offsetting these two factors which would tend to make any estimate of storage fluctuation too low is the fact that wells in part of Zone BC are more or less subject to artesian influence and therefore the fluctuations therein do not truly represent changes in storage. It is believed

that these three undetermined factors more or less offset each other and that no gross error will be introduced if all are ignored. Upon this assumption, and the other assumptions noted above as to specific yield in the various zone groups, the figures shown in Table 9 are submitted as representing the best practicable estimate of the fluctuations since 1915 of the ground water in storage underlying Santa Clara Valley north of Coyote Station.

The specific yield in the alluvial fill as thus determined varies between 7.3 per cent and 12.1 per cent in different zone groups with an average for the whole valley somewhat lower than estimated in Water Supply Paper 519 of the U. S. Geological Survey and in the Tibbetts-Kieffer report. Admittedly the information on which to base an estimate is meager and some assumptions are required in connection with which opinion may well differ, but the differences do not appear so great as to materially affect conclusions as to volume of change in ground water storage, and will certainly not affect final conclusions as to overdraft. It would appear probable that the general lowering of some 95 feet which occurred in water level in Santa Clara Valley during the 18 years 1915 to 1933 represents a decrease of approximately 729,000 acre-feet in ground water storage reserve, or an average decrement of 40,000 acre-feet per year, which is roughly 8000 acre-feet for each one foot change in water level.

This recession in ground water storage should, however, be interpreted in the light of known conditions as to draft and replenishment and to facilitate such an interpretation the variations of rainfall, pumping draft, and ground water level are shown for each year since 1915 on the plate at page 12.

The residual mass diagram of rainfall on this plate covers the period 1874 to date and represents cumulative departure from mean. The hydrograph of general water level throughout the valley covers the period 1915 to 1932 during which wells have been under observation. The records of a few wells are available continuously throughout this period and these wells were used as an index of the annual fluctuations between 1915, 1921, and 1930–33 in which years many wells were read, it being found that fluctuation in these few wells during the intervals corresponded quite closely with the fluctuation in general level as reflected by the reading of the larger group in the years named. At the bottom of the plate the estimated pumping draft is shown graphically for each year, the estimates having been prepared as described on page 31.

It will be observed that the residual mass diagram of rainfall and the hydrograph of general water level show a marked conformity, the one generally taking a precipitous slope or flattening out whenever the

other does. Thus, during the year December, 1930, to December, 1931, the general level of ground water in Santa Clara Valley fell 11.6 feet, which represents a decrement in the storage reserve of roughly 95,000 acre-feet and is in conformity with precipitation July 1, 1930, to July 1, 1931, which was only 50 per cent of normal, while general ground water level recovered 5.2 feet during the succeeding year (December, 1931, to December, 1932), which represents an accretion of roughly 44,000 acre-feet to underground storage, and is in conformity with precipitation July 1, 1931, to July 1, 1932, which was 5 per cent above normal. Likewise it will be observed that there was a marked recovery in ground water storage reserve during the years 1915–16 with precipitation 15 per cent above normal, and during the years 1920 to 1923, and 1925 to 1927 in which periods the rainfall was substantially normal.

During the 17-year period 1915 to 1932 there was a deficiency in rainfall in Santa Clara Valley equivalent to the loss of 2¼ full years of normal rainfall and the deficiency in stream flow entering the valley was equivalent to the loss of 6.7 years of normal flow, while the pumping draft increased more than four fold. These major changes in the two factors which establish and maintain the balance in reserve storage at a given level are of course the causes of the recession in ground water level and the decrement in storage reserve. Analysis of available data as represented in the plate referred to above indicates, however, that ground water replenishment in Santa Clara Valley has exceeded draft during years of normal precipitation.

Natural Sources of Ground Water Replenishment.

Replenishment of underground storage reservoirs is accomplished naturally under ordinary circumstances by penetration of rainfall upon the valley floor, by lateral percolation of rainfall precipitated upon adjacent slopes, by percolation from streams traversing the valley and by leakage from adjacent basins. Replenishment can be stimulated either by prolonging the period of flow in streams traversing the valley or by spreading surface stream flow which would otherwise waste, either within or without the stream channel so that greater areas are exposed to absorption.

In April, 1930, tests were made by the Division of Agricultural Engineering, U. S. Department of Agriculture, for the purpose of establishing the extent to which penetration of rainfall on the valley floor was effective as a contributor to ground water in Santa Clara Valley. These tests would appear to confirm tentative conclusions previously reached by Dr. F. J. Veihmeyer (Hilgardia Vol. 2, No. 6) that there is no material contribution to the ground water by direct penetration of rainfall upon ordinary soils in the central portion of the valley.

The report of these tests by the Division of Agricultural Engineering will be found as Appendix E.

It appears probable however that plant transpiration, evaporation, and surface run-off do not dispose of all rainfall precipitated on marginal areas of Santa Clara Valley where the rainfall is greatest, and that there is percolation of rainfall to ground water in these areas and probably also along stream channels, and at points where there is an accumulation of rain water upon the ground surface during storms or where irrigation water is applied in considerable quantities.

Streams traversing the valley are major contributors to the ground water supply and it is possible with the aid of the records of measurements made on Coyote River since 1902 (Appendices C and D) to estimate within reasonable limits what the contribution has been from this source. Percolation losses observed on this stream (Table 11) indicate an absorption capacity of *153 second-feet between Madrone and San Jose at fairly low stages, practically all of which is above Edenvale and therefore a source of replenishment for the underground storage basin of Santa Clara Valley. Percolation losses are greater at beginning of storm periods and at high stages.

It is estimated (Table 10) that the average contribution of Coyote River to ground water in a period of normal precipitation approximates 23,000 acre-feet per annum. Although a considerable proportion of this occurs above the Lower Gorge (Coyote) the ground water contour map accompanying this report indicates that such of this as is not withdrawn above by pumping must escape underground to the north through the Lower Gorge which has a very open formation with cross-sectional area of some **83,000 square feet below ground water level, and a gradient of 50 feet per mile.

The total contributions of the remaining streams of the valley are not readily estimated because of accretions to flow and diversions between the upper and lower gaging stations. During the course of the present investigation the Division has, however, made a large number of measurements on these streams, for the purpose of establishing the best percolating areas and estimating the rate at which these will absorb. These measurements are reported in Appendix D and a summary of the data is assembled in Table 11 which indicates the total observed absorption on each stream and the rate of absorption per mile of stream channel and per acre flooded. The measurements were made generally at low stages near the close of flood periods and the total of 332 second-feet is therefore deemed a low figure, rather than an average.

* Study of percolation losses on Coyote River indicates a high rate of absorption during the first few days of stream flow diminishing materially later in the season.

** Information as to cross-sectional area and formation taken from copy of Def. Ex. 129—*Miller* v. *Bay Cities Water Company*, 157 Cal. 256; 107 Pac. 115, loaned by H. L. Haehl.

TABLE 10

ESTIMATED WASTE AND PERCOLATION LOSSES ON COYOTE RIVER

Season	Seasonal run-off near Madrone in acre-feet [a]	Waste past Edenvale in acre-feet [b]	Estimated inflow from intermediate area in acre-feet [c]	Estimated Percolation loss in acre-feet
1902–1903	86,400	65,000	7,400	28,800
1903–1904	39,200	22,200	3,400	20,400
1904–1905	34,100	15,500	3,000	21,600
1905–1906	130,400	110,000	10,000	30,400
1906–1907	205,200	180,800	16,700	40,100
1907–1908	43,000	19,300	4,500	28,200
1908–1909	166,400	150,700	14,600	30,300
1909–1910	52,600	31,500	4,400	25,500
1910–1911	127,200	115,800	10,700	22,100
1911–1912	6,600	800	0	5,800
1912–1913	3,800	500	0	3,300
1913–1914	189,000	159,400	15,600	45,200
1914–1915	121,000	100,800	10,300	30,500
1915–1916	153,000	130,800	12,800	35,000
1916–1917	70,200	51,400	6,400	25,200
1917–1918	13,400	2,600	300	11,100
1918–1919	47,500	24,800	4,500	27,200
1919–1920	14,000	2,600	500	11,900
1920–1921	56,800	24,800	5,300	37,300
1921–1922	69,100	56,900	6,300	18,500
1922–1923	50,700	35,500	4,800	20,000
1923–1924	900	0	0	900
1924–1925	13,200	4,400	300	9,100
1925–1926	40,300	22,600	3,900	21,600
1926–1927	53,300	33,000	5,000	25,300
1927–1928	22,500	11,400	1,900	13,000
1928–1929	7,200	800	0	6,400
1929–1930	20,100	9,000	1,500	12,600
1930–1931	1,700	0	0	1,700
1931–1932	69,800	56,400	6,400	19,800
Total, 1902–1932	1,908,600	1,439,300	160,500	629,800
Average, 1902–1932	63,600	48,000	5,400	21,000
Average, 1903–1926 (normal period)	71,000	55,000	6,000	23,000

[a] Data for the years 1902 to 1912 are the sum of daily discharges taken from U. S. G. S. Water Supply Paper 519 and do not in all cases agree with the annual totals shown therein. The data for 1912 to 1914 were furnished by H. L. Haehl, and the data for 1914 to 1916 were estimated by comparison with the records of daily flow at Sunol Dam on Alameda Creek published by the United States Geological Survey. Data for the years 1916 to 1932 are from the records of the United States Geological Survey.

[b] Data for the years 1916 to 1932 were taken from the records of United States Geological Survey and for years prior to 1916, except 1906-1907 are estimated by comparison of the flow at Madrone and Edenvale stations in later years. The year 1906-1907 is estimated from the Ford Road bridge record shown in Appendix C.

[c] For basis of estimate of intermediate inflow see page 26.

TABLE 11

SUMMARY OF OBSERVED PERCOLATION LOSSES

Stream	Section under test-miles	Maximum observed stream stage C.F.S.		Maximum observed rate of percolation C.F.S.		
		Season 1931-1932, mean daily	During test	Per mile	Per acre	Total
San Antonio Creek	3.42	35.5	6.1	0.73	1.00	2.49
Permanente Creek	0.77	32.8	13.0	5.49	4.55	4.23
Stevens Creek	3.92	390	12.2	2.63	1.26	10.33
Calabazas Creek	7.17	74.6	1.9	0.37	0.45	2.68
Campbell Creek	7.59	235	16.0	1.09	0.72	8.27
San Tomas Creek and tributaries	8.00	130	130	1.00		8.00
Los Gatos Creek	3.46	2,070	86.6	4.40	0.96	15.24
Guadalupe River	3.83	599	57.6	10.02	2.47	38.37
Alamitos Creek	3.21	1,570	49.7	2.16	0.48	6.93
Coyote River, Madrone to Coyote	10.91	4,580	78.0	4.15	0.56	45.35
Coyote River, Coyote to San Jose	13.90	5,320	818	7.77	2.86	108.10
Dry Creek	2.78	14.6	2.7	0.87	1.10	2.43
Penitencia Creek	1.88	180	41.6	2.65	1.51	4.99
Berryessa Creek	3.31	20.0	2.2	0.36	0.59	1.20
Page ditch	1.50	65.0	65.0	43.33		65.00
Masson ditch (1932)					6.47	2.84
Pennemores Sink Hole No. 2					5.32	5.93
Total	75.65					332.38

NOTE—For detail refer to Appendix D.

Artificial Sources of Ground Water Replenishment.

Santa Clara Valley Conservation District has in recent years done considerable work to stimulate additional percolation to ground water by the construction of spreading works on the valley floor both within and without the natural stream channels and by the construction of small detention dams in the mountain areas with a view to flattening flood crests and thereby lengthening the period of flow in the valley. This work is described in Mr. Tibbetts' report of October 2, 1931, heretofore referred to, as is also the plan of the District to construct additional spreading works and surface storage of considerable magnitude in the upper reaches of the streams.

When preparing their report to the Santa Clara Valley Water Conservation Committee Messrs. F. H. Tibbetts and Stephen E. Kieffer made an extensive investigation of surface reservoir sites. Their report of March, 1921, describes 14 sites on streams which are tributary to the area embraced within Santa Clara Valley Water Conservation District, and are shown on the accompanying general map.

SURFACE RESERVOIRS ON STREAMS TRIBUTARY TO SANTA CLARA VALLEY

Name	*Capacity Acre-feet*
Coyote No. 1	60,000
Coyote No. 2	60,000
Calero	9,000
Almaden	2,500
Guadalupe No. 1	2,300
Guadalupe No. 2	1,200
Guadalupe No. 3	3,000
Calabazas	1,600
Stevens No. 1	4,000
Stevens No. 2	2,000
Stevens No. 3	600
Permanente, North Fork	1,170
Permanente, South Fork	1,100
San Antonio	1,000

CHAPTER IV

CONSERVATION OF WASTE

Conservable Waste on Coyote River.

Substantially all of the flow passing Edenvale in Coyote River escapes to San Francisco Bay as waste. While the percolation measurements made and reported in Appendix D indicate some loss below Edenvale this loss is offset by accretions. With surface storage and spreading works of sufficient capacity the whole of the discharge at Edenvale could be conserved but this is of course not economically feasible. Examination of the records of the daily flow at Edenvale affords the best basis for an estimate of what amount of waste can be conserved on Coyote River with practicable facilities of various capacities.

There is a record of the daily discharge at Edenvale since October 1, 1916, and by comparison with the Madrone record and the record at Sunol on Alameda Creek during periods of simultaneous discharge the Edenvale daily record has been extended backward to October 1, 1902. This extended record of daily flow at Edenvale has been analyzed for each day of the 30-year period October 1, 1902, to September 30, 1932, to ascertain what amounts of waste could have been conserved either by surface storage of different capacities with varying rates of draft, or by increased percolation and diversion at varying rates without surface storage. The conclusions derived from this analysis are set down in tables 12 and 15.

It is concluded from this analysis that over a cycle of years with normal precipitation, such as 1903 to 1926, the average annual waste conservable on Coyote River with 30,000 acre-feet of surface storage capacity and no losses by evaporation from reservoir surfaces, would vary between 21,700 and 25,800 acre-feet depending upon the rate of draft during and between storms, that the conservable waste under similar conditions for 60,000 acre-feet of surface storage capacity would vary between 30,200 and 36,000 acre-feet per annum; for 90,000 acre-feet surface storage capacity between 34,000 and 44,200 acre-feet per annum; and for 120,000 acre-feet of surface storage between 36,600 and 49,800 acre-feet per annum.

This analysis leads to the further conclusion that without surface storage during a cycle of years of normal precipitation such as 1903–1926 an average of 9400 acre-feet per year could have been conserved on Coyote River had it been practicable to construct facilities to increase the percolation and diversion rate by 100 second-feet; 12,500 acre-feet per year could have been conserved by increasing the percolation and diversion rate 150 second-feet; and 15,000 acre-feet per year could have

been conserved by increasing the percolation and diversion rate 200 second-feet (Table 15). There would however have been considerable difficulty in thus increasing percolation and diversions, particularly to the higher rates, because conservation could be effected only when the Coyote is wasting past Edenvale and at such times the other streams are also generally wasting so that little or no opportunity is available for stimulating percolation except by spreading outside the stream channels.

Conservable Waste on Guadalupe River and Alamitos Creek.

The conservable waste on Guadalupe River and Alamitos Creek has been estimated for the period January 1, 1930, to March 31, 1933, during which there is a record of the daily flow at points where these streams enter the valley. While there is a daily record of the flow of these streams for the same period at San Jose, which is below their confluence, this includes the contribution from Los Gatos Creek and valley floor and therefore in estimating the conservable waste on Guadalupe River and Alamitos Creek it was found preferable to use the records of discharge at the upper stations and make allowances for present percolation and diversions.

Percolation measurements made and reported in Appendix D, and observation of present diversions, lead to the conclusion that approximately 60 cubic feet per second of the flow of these two streams originating above the valley floor is required to satisfy present percolation and diversions and flow in this amount will seldom waste. While the present combined total percolation and diversion probably exceeds 60 cubic feet per second this excess is offset at least in part by local accretions. The conclusions would be substantially the same were this assumption varied a reasonable amount either way. Under these assumptions the records of daily flow of Guadalupe River at Guadalupe and Alamitos Creek near Edenvale were analyzed to determine what amounts could have been conserved by surface storage provided the present percolation and diversion capacity were increased to 100 cubic feet per second, which appears thoroughly practicable. The results of this analysis are set down in Table 13, from which it would appear that with the Guadalupe, Calero, and Almaden reservoirs constructed to capacities of 2000 acre-feet, 7400 acre-feet, and 2500 acre-feet respectively, a total of 15,000 acre-feet could have been conserved on these two streams during the period January 1, 1930, to March 31, 1933.

With reservoirs of such capacities and under the assumptions noted, no waste would have escaped past either reservoir at any time except the Almaden, which would have lost some 270 acre-feet in 1932.

TABLE 12

AMOUNTS OF WASTE CONSERVABLE ON COYOTE RIVER WITH SURFACE STORAGE

(No allowance is made for evaporation losses from the surface of the reservoir)

Reservoir capacity in acre-feet	Acre-feet conservable by											
	Diversions when no waste past Edenvale of[a]						Constant diversion of 50 second-feet and additional diversions when no waste past Edenvale of					
	100 second-feet		150 second-feet		200 second-feet		50 second-feet		100 second-feet		150 second-feet	
	Average 23-year period, 1903-1926	Average 30-year period, 1902-1932	Average 23-year period, 1903-1926	Average 30-year period, 1902-1932	Average 23-year period, 1903-1926	Average 30-year period, 1902-1932	Average 23-year period, 1903-1926	Average 30-year period, 1902-1932	Average 23-year period, 1903-1926	Average 30-year period, 1902-1932	Average 23-year period, 1903-1926	Average 30-year period, 1902-1932
30,000	21,700	20,700	22,000	21,100	22,200	21,400	25,400	23,900	25,600	24,200	25,800	24,500
60,000	30,200	29,000	32,300	30,600	32,900	31,100	33,800	31,700	35,700	33,200	36,000	33,400
90,000	34,000	31,900	38,400	35,300	40,700	37,000	38,500	35,300	42,000	38,100	44,200	39,700
120,000	36,600	33,900	43,500	39,200	46,400	41,500	41,200	37,400	46,800	41,700	49,800	44,100

[a] No diversions at other times.

TABLE 13

AMOUNTS OF WASTE CONSERVABLE ON GUADALUPE RIVER WITH SURFACE STORAGE AND SLIGHTLY INCREASED SPREADING AND DIVERSION CAPACITY JANUARY 1, 1930, TO MARCH 31, 1933

Assuming Almaden Reservoir constructed to 2,500 acre-feet capacity, Calero Reservoir constructed to 7,400 acre-feet capacity, and Guadalupe Reservoir constructed to 2,000 acre-feet capacity, a transfer canal of 100 second-feet capacity from the Almaden to the Calero Reservoir and existing total percolation, spreading and diverting capacity in the valley increased to 100 second-feet.

	Conservable by use of reservoirs in acre-feet				Waste escaping reservoirs in acre-feet				Uncontrolled waste originating below reservoirs and above gaging station in acre-feet			
	Jan. 1, 1930 to Sept. 30, 1930	Oct. 1, 1930 to Sept. 30, 1931	Oct. 1, 1931 to Sept. 30, 1932	Oct. 1, 1932 to Mar. 31, 1933	Jan. 1, 1930 to Sept. 30, 1930	Oct. 1, 1930 to Sept. 30, 1931	Oct. 1, 1931 to Sept. 30, 1932	Oct. 1, 1932 to Mar. 31, 1933	Jan. 1, 1930 to Sept. 30, 1930	Oct. 1, 1930 to Sept. 30, 1931	Oct. 1, 1931 to Sept. 30, 1932	Oct. 1, 1932 to Mar. 31, 1933
Almaden	[a]1,430	0	[b]3,390	[c]55	0	0	270	0				
Calero	[a]2,540	0	[b]7,370	[c]75	0	0	0	0				
Guadalupe	1,160	0	3,020	100	0	0	0	0				
Totals	3,900	0	10,850	175	0	0	270	0	1,480	0	3,560	0

NOTE—The relative proportions of the total flow entering the valley which originated above each reservoir were estimated to be: Almaden reservoir 57 per cent and Calero reservoir 12 per cent of the flow of Alamitos Creek near Edenvale, and Guadalupe reservoir 51 per cent of the flow of Guadalupe Creek at Guadalupe.

[a] These figures include a duplication of 1,230 acre-feet transferred from the Almaden to the Calero reservoir.

[b] These figures include a duplication of 2,930 acre-feet transferred from the Almaden to the Calero reservoir.

[c] These figures include a duplication of 55 acre-feet transferred from the Almaden to the Calero reservoir.

In 1929–30 Almaden Reservoir would have filled to only *1400 acre-feet or a little more than 50 per cent capacity, and in neither 1930–31 nor 1932–33 would it have received any substantial quantity of water. Calero Reservoir would have filled in 1931–32. In 1929–30 it would have filled to about *30 per cent capacity and in 1930–31 and in 1932–33 it would have conserved no substantial quantities of water. Guadalupe Reservoir would have filled only in 1931–32, when it would have filled, been drawn upon, and partially refilled. In 1929–30 this reservoir would have filled to only approximately half capacity and in 1930–31 and 1932–33 it would have conserved no substantial quantities of water.

In estimating the amounts which could have been conserved without surface storage on Guadalupe River and Alamitos Creek during the period January 1, 1930, to March 31, 1933, it was again assumed that 60 second-feet originating above the gaging stations and the valley floor presently percolate or are diverted and the record of daily flow was analyzed with a view to determining how much could be conserved by increasing the combined present rate of percolation and diversion 50 cubic feet per second, 100 cubic feet per second, and 150 cubic feet per second.

The results of this analysis are shown in Table 14. It is estimated that with 50 second-feet increase in capacity 4200 acre-feet or 18 per cent of the conservable waste could have been saved during the period January 1, 1930, to March 31, 1933; with 100 second-feet increase in capacity 6800 acre-feet or 28 per cent could have been saved; and with 150 second-feet increase in capacity 8600 acre-feet or 36 per cent could have been saved.

Conservable Waste on Los Gatos Creek.

There are no known practicable surface reservoir sites on Los Gatos Creek and in order to estimate the conservable waste from this stream the daily record of discharge at Los Gatos was analyzed for the period January 1, 1930, to March 31, 1933, under the assumption that 150 second-feet were required out of the flow originating above Los Gatos, in addition to local accretions, to satisfy present percolation and diversions, the remainder wasting into the ocean. Under this assumption it is estimated as shown in Table 14 that on Los Gatos Creek during the period January 1, 1930, to March 31, 1933, 2500 acre-feet or 14 per cent of the assumed maximum conservable waste could have been conserved with 50 second-feet additional percolation and diversion capacity, 4200 acre-feet or 23 per cent with 100 second-feet increase in capacity, and 5600 acre-feet or 31 per cent with 150 second-feet increase in capacity.

* Almaden and Calero Reservoirs are assumed to operate as a unit and it is a matter of choice which should receive credit for a portion of the water conserved.

Conservable Waste on Stevens Creek.

There is a daily record of the flow entering the valley in Stevens Creek for the period January 1, 1930, to March 31, 1933, and analysis thereof, assuming that all flow originating above the gaging station except 40 second-feet wastes into the bay, leads to the conclusion (Table 14) that during the period of observation 720 acre-feet or 22 per cent of the assumed maximum conservable waste originating above the valley floor could have been conserved by increasing the percolation and diversion capacity 20 second-feet, 1360 acre-feet or 42 per cent by a 50 second-feet increase, and 2000 acre-feet or 62 per cent by a 100 second-feet increase.

Substantially all waste originating above the valley floor during the period January 1, 1930, to March 31, 1933, could have been conserved without increasing present percolation and diversion capacity by operation of a reservoir of 1400 acre-feet capacity, provided the present percolation and diversion capacity is not less than 40 second-feet.

Conservable Waste on Minor Streams.

The inflow to the valley and the surface waste by other minor streams were measured for at least a portion of the year 1931–32, as reported in Appendix D and these daily records have been expanded to cover the full year by comparison with Coyote River, Guadalupe River, Alamitos Creek, Los Gatos Creek and Stevens Creek records, which are complete for the year. This expanded daily record for each of the minor streams has been analyzed with a view to determining what amounts could have been conserved in 1931–32 by increasing the present rates of percolation and diversion. The results of this analysis are presented in Table 15 and for purposes of ready comparison the estimated amounts conservable during the same period on the larger streams are shown therewith. Under the assumptions which are noted in this table it is indicated that the amount conserved in 1931–32 on San Antonio Creek, Permanente Creek, Campbell Creek, Penitencia Creek, and Berryessa Creek would have ranged between 2200 acre-feet or 33 per cent of the total conservable waste and 4800 acre-feet or 71 per cent, depending upon the increase in facilities for percolation and diversion.

Conservation of Local Waste Sufficient.

In estimating the amount of waste which it is practicable to conserve without surface storage, an effort has been made to apply assumptions which would lead to outside figures for each individual stream; i.e., a conservative minimum figure and a maximum figure which might be expected in the way of conservation on each stream were it alone developed. Maximum figures should not be taken on all streams. If

TABLE 14

AMOUNTS OF WASTE CONSERVABLE ON METERED STREAMS OF SANTA CLARA VALLEY WITHOUT SURFACE STORAGE

(January 1, 1930, to March 31, 1933)

Period	Discharge entering valley in acre-feet		Amounts conservable by increasing existing spreading and diversion capacity in amounts of									
			20 second-feet		50 second-feet		100 second-feet		150 second-feet		200 second-feet	
	Total	Assumed maximum conservable waste	acre-feet	Per cent of assumed maximum conservable waste	Acre-feet	Per cent of assumed maximum conservable waste	Acre-feet	Per cent of assumed maximum conservable waste	Acre-feet	Per cent of assumed maximum conservable waste	Acre-feet	Per cent of assumed maximum conservable waste
Coyote River[1]—												
Jan. 1, 1930–Sept. 30, 1930	20,900	9,030					1,100	12	1,500	17	1,800	20
Oct. 1, 1930–Sept. 30, 1931	1,670	0										
Oct. 1, 1931–Sept. 30, 1932	69,800	56,400					8,400	15	11,700	21	14,600	26
Oct. 1, 1932–Mar. 31, 1933	7,170	2,280					700	32	900	41	1,100	49
Jan. 1, 1930–Mar. 31, 1933	99,540	67,710					10,200	15	14,100	21	17,500	26
Guadalupe River[2]—												
Jan. 1, 1930–Sept. 30, 1930	12,500	6,240			960	15	1,500	24	1,900	30		
Oct. 1, 1930–Sept. 30, 1931	720	0										
Oct. 1, 1931–Sept. 30, 1932	26,500	17,300			3,100	18	5,060	29	6,400	37		
Oct. 1, 1932–Mar. 31, 1933	2,180	300			140	47	240	80	300	100		
Jan. 1, 1930–Mar. 31, 1933	41,900	23,840			4,200	18	6,800	28	8,600	36		
Los Gatos Creek[3]—												
Jan. 1, 1930–Sept. 30, 1930	15,900	5,520			700	13	1,100	20	1,500	27		
Oct. 1, 1930–Sept. 30, 1931	1,090	0										
Oct. 1, 1931–Sept. 30, 1932	28,300	12,600			1,800	15	3,100	24	4,100	33		
Oct. 1, 1932–Mar. 31, 1933	3,880	0										
Jan. 1, 1930–Mar. 31, 1933	49,170	18,120			2,500	14	4,200	23	5,600	31		
Stevens Creek[4]—												
Jan. 1, 1930–Sept. 30, 1930	3,700	1,000	160	16	340	34	550	55				
Oct. 1, 1930–Sept. 30, 1931	780	0										
Oct. 1, 1931–Sept. 30, 1932	6,590	2,120	490	23	940	44	1,400	65				
Oct. 1, 1932–Mar. 31, 1933	1,270	80	70	90	80	100	80	100				
Jan. 1, 1930–Mar. 31, 1933	12,340	3,200	720	22	1,360	42	2,000	62				

[1] The Madrone record is taken to indicate the flow into the valley and the Edenvale record is assumed to indicate the conservable waste. The average amount conservable during the period of normal rainfall, 1903-1926, are 9,400 acre-feet per annum with 100 second-feet increase in capacity, 12,500 acre-feet with 150 second-feet increase in capacity and 15,100 acre-feet with 200 second-feet increase in capacity.

[2] The combined flow given by the records of Guadalupe Creek near Guadalupe and Alamitos Creek near Edenvale is taken to indicate the inflow into the valley and the conservable waste obtained by deducting 60 second-feet from the combined flow.

[3] The record at Los Gatos is taken to indicate the flow into the valley and the conservable waste obtained by deducting 150 second-feet from these flows.

[4] The record near Cupertino is taken to indicate the flow into the valley and the conservable waste obtained by deducting 40 second-feet from these flows.

TABLE 15

AMOUNTS OF WASTE CONSERVABLE ON SANTA CLARA VALLEY STREAMS WITHOUT SURFACE STORAGE IN THE YEAR 1931-1932

Stream	Discharge entering valley in acre-feet		Amounts conservable by increasing existing spreading and diversion capacities in amounts of									
			20 second-feet		50 second-feet		100 second-feet		150 second-feet		200 second-feet	
	Total	Assumed maximum conservable waste	Acre-feet	Per cent of assumed maximum conservable waste	Acre-feet	Per cent of assumed maximum conservable waste	Acre-feet	Per cent of assumed maximum conservable waste	Acre-feet	Per cent of assumed maximum conservable waste	Acre-feet	Per cent of assumed maximum conservable waste
Coyote River[1]	69,800	56,400					8,400	15	11,700	21	14,600	26
Guadalupe River[2]	26,500	17,300			3,100	18	5,060	29	6,400	37		
Los Gatos Creek[3]	28,300	12,600			1,800	15	3,100	24	4,100	33		
Stevens Creek[4]	6,590	2,120	490	23	940	44	1,400	65				
San Antonio Creek[5]	1,210	550	330	60	470	85						
Permanente Creek[5]	1,740	220	200	91	220	100						
Campbell Creek[5]	6,590	3,020	580	19	1,200	40	1,900	64				
Penitencia Creek[5]	8,330	2,270	670	30	1,200	52	1,700	75				
Berryessa Creek[5]	1,000	670	370	55	520	78						

[1] The Madrone record is taken to indicate the flow into the valley and the Edenvale record is assumed to indicate the conservable waste. The average amount conservable during the period of normal rainfall, 1903-1926, are 9,400 acre-feet per annum with 100 second-feet increase in capacity, 12,500 acre-feet with 150 second-feet increase in capacity and 15,000 acre-feet with 200 second-feet increase in capacity.

[2] The combined flow given by the records of Guadalupe Creek near Guadalupe and Alamitos Creek near Edenvale is taken to indicate the inflow into the valley and the conservable waste obtained by deducting 60 second-feet from the combined flow.

[3] The record at Los Gatos is taken to indicate the flow into the valley and the conservable waste obtained by deducting 150 second-feet from these flows.

[4] The record near Cupertino is taken to indicate the flow into the valley and the conservable waste obtained by deducting 40 second-feet from these flows.

[5] The inflow into the valley is that estimated in Table 6 and the conservable waste is estimated by making the following deductions to compensate for accretions too far downstream for practical spreading or diversion:

San Antonio Creek 5 second-feet from record at Middlefield Road.
Permanente Creek 2 second-feet from record at Charleston Road.
Campbell Creek 10 second-feet from record at Alviso.
Penitencia Creek 10 second-feet from record at Lower Station.
Berryessa Creek 5 second-feet from record at Piedmont Road.

a maximum is taken on one stream little or nothing can be expected in the way of conservation on another stream without surface storage. For example: if it were undertaken to conserve 200 second-feet on Coyote River without storage this could be done in general only by foregoing diversions from some other stream.

It will be observed by reference to Table 15 that the estimated amount conservable in 1931–32 in Coyote River by increasing present percolation and diversion 100 cubic feet per second, and without surface storage, is 8400 acre-feet or 90 per cent of that estimated as conservable by like means during the cycle of normal rainfall 1903–1926. If it be assumed that the estimates of conservable waste for other streams of the valley in 1931–32 are likewise only 90 per cent of the average in a cycle of years having normal rainfall then the gross total conservable on all streams of the valley without surface storage during a cycle of years having normal precipitation, and with the minimum increased percolation and diversion capacities noted in Table 15, would approximate 18,000 acre-feet.

On the other hand with a surface reservoir of 60,000 acre-feet capacity constructed on Coyote River and facilities provided for drawing therefrom for percolation and diversion at an average rate of 150 cubic feet per second between periods of waste past Edenvale and without increased percolation or diversions at other times the estimated average amount conserved per year during a cycle of normal rainfall would approximate 32,000 acre-feet. If there be added to this one-half the estimated amount conservable on the remaining streams of the valley without surface storage by increasing present percolation and diversions the minimum capacities indicated in Table 15 it would appear a gross total of 37,000 acre-feet per year can be conserved in a cycle of years having normal precipitation.

Engineers of the Santa Clara Valley Water Conservation District and its predecessor, the Santa Clara Valley Water Conservation Committee, have made the necessary surveys and detailed reports* of the physical construction to accomplish this. It is believed that conservation of local waste is the most economical and best method of furnishing an additional supply of water to Santa Clara Valley. The making of detailed plans or the review of previous plans is not deemed a necessary or desirable phase of this report.

* Report by F. H. Tibbetts and S. E. Kieffer to the Santa Clara Valley Water Conservation Committee on the Santa Clara Valley Water Conservation Project (1921) and Report on Waste Water Salvage Project by F. H. Tibbetts with review by H. L. Haehl (1931).

APPENDIX A

AGREEMENT BETWEEN SANTA CLARA VALLEY WATER CONSERVATION DISTRICT AND DIVISION OF WATER RESOURCES

DEPARTMENT OF PUBLIC WORKS

OF THE

STATE OF CALIFORNIA

AGREEMENT

THIS AGREEMENT, Made and entered into this first day of January, 1930, by and between the Santa Clara Valley Water Conservation District, hereinafter referred to as the party of the first part, and the Division of Water Resources, Department of Public Works of the State of California, hereinafter referred to as the party of the second part,

WITNESSETH:

WHEREAS, The party of the first part desires a general survey of the water resources of Santa Clara Valley, in Santa Clara County, State of California:

BE IT KNOWN that the party of the first part agrees to appropriate for the purpose of financing said survey the sum of thirty five hundred dollars ($3,500.00) during the fiscal year 1929–1930.

AND BE IT FURTHER KNOWN that said parties of the first and second part agree that the party of the second part shall execute said survey and shall have full charge, control, and direction of said survey upon the following terms and conditions, to wit:

(1) The party of the second part shall be the sole judge of the scope of the survey necessary for the purpose of determining the various factors involved in the said survey of the water resources of said Santa Clara Valley, and said party of the second part shall employ all labor, purchase all supplies, equipment, materials, etc., and have entire discretion and entire charge of said survey, its employees engaged therein, the expenditure of the money hereunder and all other matters appertaining thereto;

(2) The party of the second part will submit to said party of the first part from time to time claims upon said party of the first part for expenses incurred by the party of the second part under the provisions of this agreement, and said claims shall be due and payable to the party of the second part from time to time as such claims are submitted, and payment of such claims shall be made by the party of the first part to the party of the second part within thirty days after the submission thereof; and upon the failure of the party of the first part to make any payment within such time the party of the second part may forthwith close the survey contemplated under this agreement, and shall thereupon be released of its obligation to render the report hereinafter provided for.

(3) Payments received hereunder by the party of the second part from the party of the first part will be deposited in the State treasury to the credit of the Santa Clara Valley Investigation Fund—Special—of the Division of Water Resources of the Department of Public Works of the State of California, and shall be subject to expenditure on claims presented by the party of the second part to the Department of Finance.

(4) As a part of said survey, the party of the second part shall make such office studies as it deems necessary in conjunction with said work, and shall prepare and submit to the party of the first part a report embodying the data gathered under the provisions of this contract and such other relevant data as may be in the possession of the party of the second part.

(5) This agreement may be terminated by either party by serving written notice upon the other party. If so terminated by the party of the first part, then the party of the second part will be obligated to prepare and present only such report as is practicable with such funds as have been or will be made available by the party of the first part; and if terminated by the party of the second part then the party of the first part shall be entitled to a full and complete report of all data and information gathered under the provisions of this agreement.

(6) Party of the second part shall be the sole judge as to whether the survey and studies made by it under the provisions of this agreement are sufficient to satisfy the terms of this agreement, and shall be the sole judge as to whether the report submitted by it hereunder is a sufficient and proper report to satisfy the terms of this agreement.

(7) It is understood by and between the parties hereto; (1) that performance under this contract is conditioned upon the appropriation by the party of the first part of the sum hereinbefore specified for the purpose of said survey; (2) that it is the present intention and desire of the party of the first part to make further appropriations as hereinafter stated but that the party of the first part is unable at this time to definitely state what action can or will be taken by future boards of directors in this connection, although party of the first part realizes the importance of said work and the benefit to be derived therefrom; (3) that it will require further appro-

priations by said party of the first part to complete the work hereunder contemplated; (4) that party of the first part presently intends and desires that it shall appropriate for the purpose of financing said survey the sum of twenty one hundred dollars ($2,100.00) for each of the fiscal years 1930–1931 and 1931–1932 and presently intends and desires that in case there is an unexpended balance in said appropriation at the end of any fiscal year said party of the first part will appropriate or make available the amount of said balance for use for financing said survey during the next fiscal year which amount shall be in addition to said sum of twenty one hundred dollars ($2,100.00) which said party of the first part presently intends and desires shall be appropriated for use during each of said fiscal years 1930–1931 and 1931–1932 and intends and desires that any balance remaining at the end of the year 1931–1932 shall be appropriated to finance the report herein provided for if said balance be needed for that purpose; and (5) that in the event that amounts presently or hereafter appropriated by the party of the first part prove inadequate to finance a complete survey, the party of the second part shall be obligated to make only such a survey and report as the funds provided for by party of the first part shall permit and that upon failure of the party of the first part to make the appropriations it presently intends and desires to make, the party of the second part may discontinue work and make such a report as funds made available by the party of the first part may permit, or may continue work and submit such a report as said funds provided by the party of the first part may permit.

(8) It is further understood by and between the parties hereto: (1) that party of the second part will contribute from the funds provided in chapter 832 of the Statutes of 1929, appropriating funds for the investigation of the water resources of California, for the financing of said survey the sum of thirty-five hundred dollars ($3,500.00) during the fiscal year 1929–1930; (2) that party of the second part will contribute from the funds provided in chapter 832 of the Statutes of 1929, appropriating funds for the investigation of the water resources of California, for the financing of said survey the sum of twenty-one hundred dollars ($2,100.00) during the fiscal year 1930–1931, provided party of the first part shall appropriate like sums for said survey during said fiscal years; and (3) provided that sufficient funds remain available in the appropriation made under the provisions of chapter 832 of the Statutes of 1929, or provided the Legislature of the State of California appropriates funds in an amount sufficient and available to enable such contribution, the party of the second part will contribute to the financing of said survey the sum of twenty-one hundred dollars ($2,100.00) during the fiscal year 1931–1932, provided party of the first part shall appropriate a like sum for said survey during said fiscal year.

(9) It is mutually understood and agreed that this contract is to take effect on the first day of January, 1930.

IN WITNESS WHEREOF, The parties hereto have caused this instrument to be signed in duplicate, sealed and delivered by its proper officers duly authorized by law to do so.

SANTA CLARA VALLEY WATER CONSERVATION DISTRICT,
By LEROY ANDERSON,
President of Board of Directors

[SEAL]

SANTA CLARA VALLEY
WATER CONSERVATION DIST.
Organized
Nov. 12, 1929

DIVISION OF WATER RESOURCES,
DEPARTMENT OF PUBLIC WORKS,
STATE OF CALIFORNIA.
By EDWARD HYATT,
State Engineer, Chief of Division of Water Resources.

Approved
C.C.C.

APPROVED:
B. B. MEEK,
Director of Department of Public Works,
State of California.
[SEAL]

OK as to funds
C. de S.
Deputy Director

APPENDIX B

PRECIPITATION DATA

MONTHLY SUMMARY OF PRECIPITATION AT COOPERATIVE STATIONS

Records of Daily Precipitation Available at Office of the Division of Water Resources

The mean precipitation for each station was obtained by comparison of the recorded precipitation at that station with the recorded precipitation during a simultaneous period at the five U. S. Weather Bureau stations shown in Table 2.

Month	Nilson 5-H-No. 2	Rusconi 5-F-No. 3	Moody 8-D-No. 5	Anderson 7-H-No. 4	Parker 17-G-No. 8
Season 1919-20 –					
July	0	0	----------	----------	----------
August	0	0	----------	----------	----------
September	0.50	0.62	----------	----------	----------
October	0.22	0.40	----------	----------	----------
November	0	0	----------	----------	----------
December	4.48	3.23	----------	----------	----------
January	0.12	0.33	----------	----------	----------
February	0.55	0.39	----------	----------	----------
March	3.19	2.42	----------	----------	----------
April	1.00	0.54	----------	----------	----------
May	0	0	----------	----------	----------
June	0	0	----------	----------	----------
Totals	10.06	7.93	9.05	----------	----------
Mean seasonal	15.9	13.0	14.9	----------	----------
Per cent of mean seasonal	63	61	61	----------	----------
Season 1920-21 –					
July	0	0	----------	0	----------
August	0	0	----------	0	----------
September	0.13	0	----------	0.04	----------
October	2.09	1.72	----------	2.00	----------
November	1.19	1.08	----------	1.30	----------
December	3.32	3.50	----------	3.45	----------
January	7.13	5.64	----------	6.79	----------
February	0.94	0.94	----------	0.99	----------
March	1.23	0.53	----------	0.98	----------
April	0.24	0.35	----------	0.31	----------
May	1.09	0.32	----------	0.97	----------
June	0	0	----------	0	----------
Totals	17.36	14.08	15.45	16.83	----------
Mean seasonal	15.9	13.0	14.9	15.9	----------
Per cent of mean seasonal	109	108	104	106	----------
Season 1921-22 –					
July	0	0	----------	0	----------
August	0	0	----------	0	----------
September	0.12	0.06	----------	0.13	----------
October	0.27	0.36	----------	0.16	----------
November	1.40	1.18	----------	1.21	----------
December	5.80	5.00	----------	5.66	----------
January	1.85	1.58	----------	1.92	----------
February	5.70	3.73	----------	4.82	----------
March	1.19	1.13	----------	1.24	----------
April	0.23	0	----------	0.22	----------
May	0.25	0	----------	0.20	----------
June	0	0	----------	0	----------
Totals	16.81	13.04	14.61	15.56	21.60
Mean seasonal	15.9	13.0	14.9	15.9	20.4
Per cent of mean seasonal	106	100	98	98	106
Season 1922-23 –					
July	0	0	----------	0	----------
August	0	0	----------	0	----------
September	0	0	----------	0	----------
October	0.90	1.65	----------	1.10	----------
November	3.57	3.18	----------	3.45	----------
December	5.33	3.81	----------	5.42	----------
January	2.32	2.29	----------	2.58	----------
February	1.20	0.60	----------	1.29	----------
March	0	0.40	----------	0.26	----------
April	1.77	1.69	----------	1.45	----------
May	0	0	----------	0	----------
June	0.25	0	----------	0.15	----------
Totals	15.34	13.62	17.00	15.70	17.59
Mean seasonal	15.9	13.0	14 9	15.9	20.4
Per cent of mean seasonal	96	105	114	99	86

MONTHLY SUMMARY OF PRECIPITATION AT COOPERATIVE STATIONS—Continued

Records of Daily Precipitation Available at Office of the Division of Water Resources

Month	Nilson 5-H-No. 2	Ruseoni 5-F-No. 3	Moody 8-D-No. 5	Anderson 7-H-No. 4	Parker 17-G-No. 8	Ainsworth 2-I-No. 1
Season 1923-24						
July	0	0	----------	0	----------	0
August	0	0	----------	0	----------	0
September	1.26	1.58	----------	0.66	----------	1.05
October	0.10	0.30	----------	0.26	----------	0.43
November	0.15	0	----------	0.11	----------	0
December	0.56	0.17	----------	0.75	----------	0.64
January	2.27	1.22	----------	2.24	----------	2.78
February	0.42	0.49	----------	0.44	----------	0.66
March	1.67	1.10	----------	1.78	----------	1.92
April	0.31	0.30	----------	0.34	----------	0.39
May	0	0	----------	0	----------	0.37
June	0	0.62	----------	0	----------	0
Totals	6.74	5.78	8.26	6.58	7.50	8.24
Mean seasonal	15.9	13.0	14.9	15.9	20.4	22.2
Per cent of mean seasonal	42	44	55	41	37	37
Season 1924-25—						
July	0	0	----------	0.08	----------	0
August	0	0	----------	0	----------	0
September	0	0	----------	0	----------	0
October	1.38	1.58	----------	1.45	----------	1.99
November	1.00	1.00	----------	1.22	----------	1.35
December	1.98	0.88	----------	1.95	----------	2.94
January	0.75	0.36	----------	0.65	----------	1.03
February	4.41	3.33	----------	4.16	----------	6.75
March	1.63	0.82	----------	2.05	----------	2.46
April	1.64	0.85	----------	1.44	----------	1.53
May	3.40	2.19	----------	2.52	----------	2.70
June	0	0	----------	0	----------	0
Totals	16.19	11.01	12.73	15.52	16.62	20.75
Mean seasonal	15.9	13.0	14.9	15.9	20.4	22.2
Per cent of mean seasonal	102	85	85	98	81	93
Season 1925-26—						
July	0	0	----------	0	----------	0
August	0	0	----------	0	----------	0
September	0	0	----------	0	----------	0.11
October	0.27	0	----------	0.22	----------	0.18
November	0.98	0.98	----------	1.03	----------	1.17
December	1.18	1.08	----------	1.60	----------	1.45
January	4.27	2.83	----------	4.41	----------	5.86
February	5.64	4.93	----------	5.57	----------	8.28
March	0.12	0	----------	0.14	----------	0.19
April	4.45	3.57	----------	4.61	----------	5.21
May	0.11	0	----------	0.09	----------	0.10
June	0	0	----------	0	----------	0
Totals	17.02	13.39	15.92	17.67	21.05	22.55
Mean seasonal	15.9	13.0	14.9	15.9	20.4	22.2
Per cent of mean seasonal	107	103	107	111	103	102

MONTHLY SUMMARY OF PRECIPITATION AT COOPERATIVE STATIONS—Continued

Records of Daily Precipitation Available at Office of the Division of Water Resources

Month	Nilson 5-H-No. 2	Rusconi 5-F-No. 3	Moody 8-D-No. 5	Anderson 7-H-No. 4	Parker 17-G-No. 8	Ainsworth 2-I-No. 1
Season 1926-27—						
July	0	0		0		0
August	0	0		0		0
September	0	0		0		0
October	0.75	0		0.73		1.33
November	4.72	2.76		4.80		5.92
December	0.99	1.27		1.00		1.11
January	2.00	1.81		2.22		2.53
February	4.97	4.28		4.42		7.02
March	1.12	1.20		1.20		1.48
April	2.23	0.95		2.39		3.38
May	0.12	0.20		0		0.03
June	0.35	0		0		0.33
Totals	17.25	12.47	13.84	16.76	22.04	23.13
Mean seasonal	15.9	13.0	14.9	15.9	20.4	22.2
Per cent of mean seasonal	108	96	93	105	108	104
Season 1927-28—						
July	0	0		0		0
August	0	0		0		0
September	0	0		0.02		0
October	0.73	0.72		0.83		1.15
November	2.03	1.63		2.03		2.88
December	2.26	2.12		2.01		3.31
January	1.18	0.93		1.37		1.56
February	1.56	1.50		1.60		2.43
March	2.42	1.15		2.37		5.53
April	0.97	0.64		0.93		2.12
May	0	0		0.15		0
June	0	0		0		0
Totals	11.15	8.69	11.37	11.31	15.59	18.98
Mean seasonal	15.9	13.0	14.9	15.9	20.4	22.2
Per cent of mean seasonal	70	67	76	71	76	85

MONTHLY SUMMARY OF PRECIPITATION AT COOPERATIVE STATIONS—Continued

Records of Daily Precipitation Available at Office of the Division of Water Resources

Month	Nilson 5-H-No. 2	Rusconi 5-F-No. 3	Moody 8-D-No. 5	Anderson 7-H-No. 1	Parker 17-G-No. 8	Ainsworth 2-I-No. 1	Knowles 8-J-No. 6	Lantz 11-E-No. 7	Maggard 22-E-No. 9
Season 1928-29—									
July	0	0		0		0	0	0	0
August	0	0		0		0	0	0	0
September	0	0		0		0	0	0	0
October	0	0		0		0	0	0	0 01
November	2 45	2.52		2.53		3.20	3 06	2.55	5 31
December	2.11	2.05		2.18		3.48	2 45	2 34	3 85
January	0 81	0.80		0 62		0.92	0 75	0 81	1 87
February	1.12	0.55		1 09		1 09	2 73	0 64	2.62
March	1 16	0.92		1.31		1.27	1 72	1 28	3.10
April	0.82	0.95		0.98		1 20	1 45	1.04	1.67
May	0	0		0 03		0.85	0	0 12	0
June	0.71	0.52		0.45		0 43	0 19	1 11	0.96
Totals	9 18	8 31	10 78	9 19	14.20	12 44	12.35	9 89	19.39
Mean seasonal	15 9	13 0	14 9	15.9	20 4	22.2	19 6	12 6	29 6
Per cent of mean seasonal	58	64	72	58	70	56	63	78	66
Season 1929-30—									
July	0	0	0	0		0	0	0	0
August	0	0	0	0		0	0	0	0
September	0	0	0	0		0	0	0	0
October	0	0	0	0		0	0	0	0.04
November	1 05	0	0	0		0	0	0	0
December	0	0 88	1 14	1 11		1.83	2 62	1 08	3 59
January	4 45	3.81	3 71	4 00		5.53	5 41	3 30	6.70
February	3.06	2.24	2.49	2.92		3.84	2 96	1 97	4.56
March	3.90	3.00	2 71	3.81	3 12	4 99	4 76	3 18	3.92
April	0.75	0 55	1 11	0 63	1.04	1.00	1 01	0.86	1.13
May	0 21	0.55	1.34	0 54	0.63	0.13	0 58	0.91	0.50
June	0	0	0	0	0	0.02	0	0 02	0
Totals	13.42	11.03	12 50	13.01	15 92	17.34	17 34	11 32	20.44
Mean seasonal	15.9	13 0	14 9	15 9	20 4	22 2	19 6	12 6	29 6
Per cent of mean seasonal	84	85	84	82	78	78	88	90	69

MONTHLY SUMMARY OF PRECIPITATION AT COOPERATIVE STATIONS—Continued

Records of Daily Precipitation Available at Office of the Division of Water Resources

Month	Nilson 5-H-No. 2	J. Bucher (Rusconi) 5-F-No. 3	Moody 8-D-No. 5	Anderson 7-H-No. 4	Parker 17-G-No. 8	Ainsworth 2-I-No. 1	Knowles 8-J-No. 6	Lantz 11-E-No. 7	G. B. Roop (Maggard) 22-E-No. 9	Ward 17-I-No. 10
Season 1930-31—										
July	0	0	0	0	0	0	0	----------	0	0
August	0	0	0	0	0.38	0	0	----------	0	0
September	0	0.13	0.04	0.01	0 20	1.22	0.03	----------	0 02	.08
October	0 17	0.34	0.41	0 14	0.20	0.36	0.14	----------	0.96	.07
November	0.76	0.88	0.73	0.80	1.37	1.81	1.24	----------	2.87	2.43
December	0	0	0.21	0.25	1.83	0.23	0.01	----------	1.76	0
January	4 47	4.64	3.61	4 91	3.71	5.73	5.69	3.78	5.05	6 18
February	1.37	2.06	1 69	1.34	2.78	1.44	1.16	1.26	2.61	1.34
March	0.73	0.44	0.79	0.71	1.29	0.96	0.77	0.53	1.85	1 12
April	0 48	0.30	1.11	0.60	0.52	0.46	0.49	0.50	0.85	.90
May	0 72	1.20	1.26	1 00	1 74	0.75	1.24	1.51	0.99	0
June	0	0	0.07	0.08	0	0.18	0	0.02	0.31	0
Totals	8 70	9.99	9.92	9 84	14 02	13 14	10.77	[a]7.60	17.27	12 12
Mean seasonal	15 9	13 0	14.9	15.9	20.4	22.2	19.6	12.6	29.6	25.6
Per cent of mean seasonal	55	77	66	62	69	59	55	----------	58	47
Season 1931-32—										
July	0	0	0	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0	0	0	0
September	0	0	0	0	0.06	0	0	0	0	0
October	0	0	0.05	0.07	0.07	0.39	0.15	1.65	2.38	.58
November	1 91	3 29	2.19	2.11	2.44	2.25	1.94		3.28	2.20
December	8 32	5.85	5.13	8.13	12.45	12.68	11.69	5.18	15.42	17.51
January	2.12	2.19	2.22	2.19	4 05	3.55	2.88	2.48	6.57	3.81
February	3 28	2.77	2.64	2.90	2 76	4.00	4.00	2 26	5.44	5.00
March	0 10	0.10	0.30	0 16	0 50	0 28	0.36	0.42	0.85	.42
April	0 34	0.49	0.33	0.31	0.26	0.30	0.63	0 19	0.53	.50
May	0 21	0.16	0.36	0 18	0 15	0.16	0	0 11	0.82	.62
June	0	0	0	0	0	0	0	0	0	0
Totals	16 28	14.85	13.22	16.05	22.74	23.61	21.65	12.29	35.29	30 64
Mean seasonal	15 9	13.0	14.9	15 9	20 4	22.2	19.6	12.6	29.6	25.6
Per cent of mean seasonal	102	114	89	101	111	106	110	97	119	120

[a] Partial year.

APPENDIX C

STREAM FLOW DATA

Only those data not published by the U. S. Geological Survey are presented herein. The remaining data can be obtained from the U. S. Geological Survey.

DAILY DISCHARGE, IN SECOND-FEET, OF SAN ANTONIO CREEK AT LOS ALTOS FOR THE PERIOD JANUARY 15, 1932, TO SEPTEMBER 30, 1932

Location—Staff gage 20 feet downstream from bridge, at Burke Avenue, near town of Los Altos.

Drainage Area—6.9 square miles (mountain area).

Records Available—January 15, 1932, to September 30, 1932.

Extremes—Maximum observed discharge during period 44.3 second-feet, February 8; no flow after May 10.

Remarks—Discharge curve well defined above 5 second-feet; for smaller discharges curve has been extended to zero flow unsupported by measurements. Some diversion above the station; see statement on page 21.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1					8.5	1.3	0.3	0.3				
2					6.0	1.3	0.3	0.3				
3					3.5	1.3	0.3	0.3				
4					4.0	1.2	0.3	0.2				
5					9.5	1.2	0.3	0.1				
6					20.0	1.2	0.3	0.1				
7					14.2	1.1	0.3	0.1				
8					25.3	1.1	0.3	0.1				
9					35.5	1.0	0.2	0.1				
10					20.6	1.0	0.2	0.0				
11					14.0	0.9	0.2	0				
12					10.8	0.9	0.2	0				
13					9.1	0.8	0.2	0				
14					8.9	0.8	0.2	0				
15				17.9	8.2	0.7	0.2	0				
16				10.3	5.8	0.7	0.2	0				
17				5.3	3.2	0.7	0.2	0				
18				3.8	2.7	0.6	0.2	0				
19				3.2	2.5	0.6	0.2	0				
20				3.0	2.5	0.6	0.2	0				
21				2.8	2.5	0.6	0.1	0				
22				2.5	2.5	0.6	0.1	0				
23				2.2	2.3	0.5	0.1	0				
24				2.0	2.1	0.5	0.1	0				
25				1.8	1.8	0.5	0.1	0				
26				1.7	1.6	0.5	0.1	0				
27				1.6	1.5	0.4	0.1	0				
28				1.6	1.4	0.4	0.2	0				
29				1.8	1.3	0.4	0.2	0				
30				2.0		0.3	0.2	0				
31				5.5		0.3		0				
Totals				69.0	231.8	24.0	6.1	1.6				
Mean				4.05	7.99	0.77	0.20	0.05				
Maximum				17.9	35.5	1.3	0.3	0.3				
Minimum				1.6	1.3	0.3	0.1	0				
Total acre-feet				137	460	47.3	11.9	3.0				

Total for period, 659 acre-feet.

DAILY DISCHARGE, IN SECOND-FEET, OF SAN ANTONIO CREEK AT SAN FRANCISCO HIGHWAY FOR THE YEAR ENDING SEPTEMBER 30, 1932

Location—Staff gage at San Francisco Highway.

Drainage Area—8.3 square miles (6.9 square miles mountain area and 1.4 square miles valley area).

Records Available—October 1, 1931, to September 30, 1932.

Extremes—Maximum observed discharge during period, 147 second-feet, December 28, 1931; no flow after March 14, 1932.

Remarks—Discharge curve well defined above 5 second-feet; for smaller discharges curve has been extended to zero flow unsupported by measurements. Some diversion above the station; see statement on page 21.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1			0	2 0	8 6	1 9						
2			0	3 0	5 8	1 9						
3			0	0 3	3 5	2 0						
4			0	0	3 8	2 0						
5			0	0	7 2	2 1						
6			0	0	20 4	2 1						
7			0	0	13 5	2 0						
8			0	0	28 0	1 8						
9			0	0	32 0	1 7						
10			0	0	16 0	1 6						
11			0	0	9 5	1 4						
12			0	0	7 3	1 3						
13			0	0	6 4	1 2						
14			0	0	6 8	6						
15			0	19 0	6 5	0						
16			0	11 0	5 1	0						
17			0	5 5	3 6	0						
18			0	4 3	3 3	0						
19			0	3 7	3 1	0						
20			0	3 3	3 0	0						
21			0	3 1	2 9	0						
22			0	2 9	2 8	0						
23			0	2 7	2 8	0						
24			0	2 0	2 7	0						
25			0	1 5	2 6	0						
26			0	1 7	2 5	0						
27			76 5	2 0	2 4	0						
28			92 0	2 4	2 2	0						
29			8 3	2 4	2 1	0						
30			4 0	2 9		0						
31			4 5	5 9		0						
Totals			175 3	81 6	216 4	23 6						
Mean			5 65	2 63	7 46	0 76						
Maximum			82 0	19 0	32 0	2 1						
Minimum			0	0	2 1	0						
Total acre-feet			348	160	431	49 2						

No flow

Total for season, 988 acre-feet.

DAILY DISCHARGE, IN SECOND-FEET, OF SAN ANTONIO CREEK AT MIDDLEFIELD ROAD FOR THE PERIOD JANUARY 31 TO SEPTEMBER 30, 1932

Location—Staff gage at bridge on Middlefield Road.

Drainage area—10.4 square miles (6.9 square miles mountain area and 3.5 square miles valley area).

Records available—January 31, to September 30, 1932.

Extremes—Maximum observed discharge 44.8 second-feet, February 8, 1932; no flow after March 12, 1932.

Remarks—Discharge curve is well defined above 4 second-feet; for smaller discharges curve has been extended to zero flow unsupported by measurements. Some diversion above the station; no diversions below the station; see statement on page 21.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1					5.7	0.2						
2					3.8	.3						
3					2.3	.3						
4					2.0	.3						
5					6.6	.4						
6					19.2	.4						
7					13.0	.3						
8					27.5	.3						
9					31.2	.2						
10					17.7	.2						
11					5.0	.1						
12					5.8	.1						
13					6.5	0						
14					6.3	0						
15					4.0	0						
16					2.3	0						
17					1.4	0						
18					1.7	0						
19					2.4	0						
20					2.3	0						
21					2.1	0						
22					1.8	0						
23					1.4	0						
24					1.0	0						
25					.6	0						
26					.5	0						
27					.4	0						
28					.3	0						
29					.2	0						
30						0						
31				2.6		0						
Totals				2.6	175.0	3.1						
Mean					6.03	.1						
Maximum					31.2	.4						
Minimum					.2	0						
Total acre-feet				5.7	347	6.2						

Total for period, 359 acre-feet.

DAILY DISCHARGE, IN SECOND-FEET, OF PERMANENTE CREEK AT LOYOLA FOR THE PERIOD JANUARY 15 TO SEPTEMBER 30, 1932

Location—Staff gage at Peninsular Railroad bridge at Loyola.

Drainage area—8.0 square miles. (7.7 square miles mountain and foothill area and 0.3 square mile valley area.)

Records available—January 15, 1932, to September 30, 1932.

Extremes—Maximum observed discharge during period, 36.7 second-feet January 15, 1932. No flow after April 7, 1932.

Remarks—Discharge curve well defined between 8 and 38 second-feet; curve has been extended to zero flow. Small diversions above the station; see statement on page 21.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1					7.7	4.4	1.2					
2					6.4	4.3	1.0					
3					5.1	4.2	.9					
4					4.9	4.1	.7					
5					5.7	4.0	.5					
6					12.3	3.9	.4					
7					12.7	3.8	.2					
8					22.2	3.8	0					
9					32.8	3.7	0					
10					25.8	3.6	0					
11					17.4	3.6	0					
12					13.8	3.5	0					
13					12.2	3.4	0					
14					11.9	3.4	0					
15				23.7	10.5	3.4	0					
16				14.0	8.8	3.2	0					
17				8.9	7.2	3.0	0					
18				6.8	6.9	2.8	0					
19				5.7	6.6	2.6	0					
20				5.6	6.5	2.4	0					
21				5.5	6.4	2.2	0					
22				4.6	6.2	2.0	0					
23				3.8	5.7	1.8	0					
24				3.1	5.3	1.7	0					
25				3.1	4.8	1.7	0					
26				2.6	4.4	1.6	0					
27				2.0	4.4	1.6	0					
28				1.5	4.4	1.6	0					
29				1.5	4.4	1.5	0					
30				1.5		1.5	0					
31				1.5		1.3						
Total				95.4	283.4	89.6	4.9					
Mean				5.61	9.77	2.89	0.16					
Maximum				23.7	32.8	4.4	1.2					
Minimum				1.5	4.4	1.3	0					
Total acre-feet				189	562	178	9.5					

No flow

Total for period, 938 acre-feet

DAILY DISCHARGE, IN SECOND-FEET, OF PERMANENTE CREEK AT SAN FRANCISCO HIGHWAY FOR THE PERIOD DECEMBER 1, 1931, TO SEPTEMBER 30, 1932

Location—Staff gage at bridge at San Francisco Highway, 1 mile south of the town of Castro.

Drainage area—12.7 square miles (10.3 square miles mountain and foothill area and 2.4 square miles valley area).

Records available—December 1, 1931, to September 30, 1932.

Extremes—Maximum observed discharge during period 207.2 second-feet, December 27, 1931; no flow after February 16.

Remarks—Discharge curve well defined between 0 and 45 second-feet; curve has been extended for greater discharges from area and velocity curves. Some diversions above the station; see statement on page 21.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1			0	0	0							
2			0	0	0							
3			0	0	0							
4			0	0	0							
5			0	0	0							
6			0	0	0.7							
7			0	0	1.0							
8			0	0	8.3							
9			0	0	28.5							
10			0	0	7.9							
11			0	0	2.9							
12			0	0	0.3							
13			0	0	0							
14			0	0	0							
15			0	10.8	0.8							
16			0	0.6	0.4							
17			0	0	0							
18			0	0	0							
19			0	0	0							
20			0	0	0							
21			0	0	0							
22			0	0	0							
23			0	0	0							
24			0	0	0							
25			0	0	0							
26			20.0	0	0							
27			72.0	0	0							
28			27.9	0	0							
29			0.8	0	0							
30			0	0								
31			0	0								
Totals			120.7	11.4	50.8							
Mean			3.89	0.37	1.75							
Maximum			72.0	10.8	28.5							
Minimum			0	0	0							
Total acre-feet			239	22.7	101							

No flow

Total for period, 363 acre-feet.

DAILY DISCHARGE, IN SECOND-FEET, OF PERMANENTE CREEK AT CHARLESTON ROAD FOR THE PERIOD FEBRUARY 1, TO SEPTEMBER 30, 1932

Location—Staff gage at bridge at Charleston Road 2 miles north of the town of Castro.

Drainage area—17.4 square miles (10.3 square miles mountain and foothill area and 7.1 square miles valley area).

Records available—February 1, 1932, to September 30, 1932.

Extremes—Maximum observed discharge during period, 61.2 second-feet, February 8, 1932; no flow after February 10.

Remarks—Discharge curve well defined between 0 and 36 second-feet; curve has been extended for greater discharges unsupported by measurements. Some diversions above the station. No diversions below the station; see statement on page 21.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1					0							
2					0							
3					0							
4					0							
5					0							
6					5.6							
7					3.9							
8					23.2							
9					24.3							
10					4.3							
11					9							
12					0							
13					0							
14					0							
15					0							
16					0							
17					0							
18					0							
19					0							
20					0							
21					0							
22					0							
23					0							
24					0							
25					0							
26					0							
27					0							
28					0							
29					0							
30												
31												
Totals					62.2							
Mean					2.14							
Maximum					24.3							
Minimum					0							
Total acre-feet					123							

No flow

Total for period, 123 acre-feet.

DAILY DISCHARGE, IN SECOND-FEET, OF STEVENS CREEK AT HOMESTEAD ROAD FOR THE PERIOD JANUARY 15, TO SEPTEMBER 30, 1932

Location—Staff gage, reference point corner of west upstream parapet post of bridge at Homestead Road=18.85 feet.

Drainage area—19.2 square miles (18.3 square miles mountain and foothill area and 0.9 square miles valley area).

Records available—January 15, to September 30, 1932.

Extremes—Maximum observed discharge during period, 105 second-feet, February 8th and 9th; no flow after March 23d.

Remarks—Discharge curve well defined between 0 and 60 second-feet; curve extended from area and velocity curves. Some diversions above the station; see statement on page 21.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1					32.5	3.5						
2					26.0	2.8						
3					17.1	2.1						
4					14.2	1.4						
5					28.0	.7						
6					68.0	0						
7					61.0	.3						
8					75.8	.5						
9					94.7	.8						
10					64.0	1.1						
11					53.5	1.4						
12					46.3	1.6						
13					33.4	1.9						
14					30.5	2.6						
15				83.0	33.3	3.2						
16				39.0	27.8	2.8						
17				24.8	19.5	2.5						
18				22.0	16.9	2.1						
19				20.8	15.2	1.8						
20				13.8	14.5	1.4						
21				10.2	14.0	1.0						
22				8.9	13.2	.7						
23				7.6	12.1	.3						
24				5.9	10.9	0						
25				4.2	9.5	0						
26				4.7	8.2	0						
27				5.7	6.7	0						
28				4.1	5.1	0						
29				4.9	3.8	0						
30				5.3		0						
31				9.8		0						
Totals				274.7	855.7	36.5						
Mean				16.16	29.5	1.18						
Maximum				83.0	94.7	3.5						
Minimum				4.1	3.8	0						
Total acre-feet				544.0	1,694	72.3						

Total for period, 2,310 acre-feet.

DAILY DISCHARGE, IN SECOND-FEET, OF STEVENS CREEK AT SAN FRANCISCO HIGHWAY FOR THE PERIOD DECEMBER 1, 1931, TO SEPTEMBER 30, 1932

Location—Staff gage, reference point on corner of west downstream wing wall of bridge at San Francisco Highway=7.55 feet.

Drainage area—23.1 square miles (19.1 square miles mountain and foothill area and 4.0 square miles valley area).

Records available—December 1, 1931, to September 30, 1932.

Extremes—Maximum observed discharge during period, 701 second-feet December 27, 1931; no flow after February 19, 1932.

Remarks—Discharge curve fairly well defined between 0 and 400 second-feet; curve extended from area and velocity curves. Water is diverted above the station for the Losse Ditch and others, see statement on page 21.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1			0	0	5 2							
2			0	1 2	.6							
3			0	4	0							
4			0	0	0							
5			0	0	0							
6			0	0	66 4							
7			0	0	45 5							
8			0	0	64 7							
9			0	0	111 9							
10			0	0	49 0							
11			0	0	20 5							
12			0	0	10 4							
13			0	0	3 3							
14			0	0	2 3							
15			0	35 3	1 8							
16			0	8 8	1 0							
17			0	0	.3							
18			0	0	.1							
19			0	.8	0							
20			0	2	0							
21			0	0	0							
22			0	0	0							
23			0	0	0							
24			114 1	0	0							
25			33 8	0	0							
26			43 4	0	0							
27			543 5	0	0							
28			275 9	0	0							
29			38 9	0	0							
30			1 4	0								
31			.4	0								
Totals			1,051 4	46 7	383 0							
Mean			33 92	1 51	13 21							
Maximum			543 5	35 3	111 9							
Minimum			0	0	0							
Total acre-feet			2,090	92 8	760							

No flow

Total for period, 2,940 acre-feet

DAILY DISCHARGE, IN SECOND-FEET, OF STEVENS CREEK NEAR WHISMAN SCHOOL FOR THE PERIOD FEBRUARY 1 TO SEPTEMBER 30, 1932

Location—Staff gage, reference point, top surface of floor plank at center of upstream side of first bridge downstream from Whisman School=7.75 feet.
Drainage area—25.3 square miles (19.1 square miles mountain and foothill area and 6.2 square miles valley area).
Records available—February 1, to September 30, 1932.
Extremes—Maximum observed discharge during period, 264 second-feet, February 8; no flow after February 16.
Remarks—Discharge curve fairly well defined. Some diversions above the station. No water is diverted below the station; see statement on page 21.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1					11.6							
2					2.6							
3					0.1							
4					0.0							
5					0.0							
6					61.2							
7					48.9							
8					82.5							
9					149.5							
10					49.1							
11					23.9							
12					15.4							
13					10.6							
14					5.7							
15					3.2							
16					1.7							
17					0.0							
18					0	No flow	No flow	No flow	No flow	No flow	No flow	No flow
19					0							
20					0							
21					0							
22					0							
23					0							
24					0							
25					0							
26					0							
27					0							
28					0							
29					0							
30												
31												
Totals					466.0							
Mean					16.1							
Maximum					149.5							
Minimum					0							
Total acre-feet					921							

Total for period, 924 acre-feet.

DAILY DISCHARGE, IN SECOND-FEET, OF CALABAZAS CREEK AT CUPERTINO-SARATOGA ROAD FOR THE PERIOD FEBRUARY 1 TO SEPTEMBER 30, 1932

Location—Staff gage, reference point at angle formed by west upstream abutment and arch of bridge at Cupertino-Saratoga Road—6.00 feet.

Drainage area—3.7 square miles (3.2 square miles mountain and foothill area and 0.5 square miles valley area).

Records available—February 1, to September 30, 1932.

Extremes—Maximum observed discharge during period, 140 second-feet, February 8; no flow after February 18.

Remarks—Discharge curve well defined between 0 and 30 second-feet; curve extended from area and velocity curves. Some diversions above the station; see statement on page 21.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1					6.5							
2					1.4							
3					1.9							
4					.3							
5					6.1							
6					48.6							
7					11.2							
8					74.6							
9					52.3							
10					18.7							
11					8.9							
12					5.2							
13					3.1							
14					2.7							
15					1.5							
16					.6							
17					.3							
18					.2							
19					0							
20					0							
21					0							
22					0							
23					0							
24					0							
25					0							
26					0							
27					0							
28					0							
29					0							
30												
31												
Totals					214.4							
Mean					8.12							
Maximum					74.6							
Minimum					0							
Total acre-feet					481							

Total for period, 484 acre-feet.

DAILY DISCHARGE, IN SECOND FEET, OF CAMPBELL CREEK AT CUPERTINO-SARATOGA ROAD FOR THE PERIOD FEBRUARY 1 TO SEPTEMBER 30, 1932

Location—Staff gage, reference point nail and tin in 6-inch tree on west bank, 12 feet upstream from bridge at Cupertino-Saratoga Road elevation=5.20 feet, and top of second vertical plank from downstream face of bridge on west bank, elevation=3.55 feet.

Drainage area—9.7 square miles (9.6 square miles mountain and foothill area and 0.1 square miles valley area).

Records available—February 1, to September 30, 1932.

Extremes—Maximum observed discharge during period, 328 second-feet, February 6; no flow after July 2, 1932.

Remarks—Discharge curve well defined between 0 and 200 second-feet. Some diversions above the station; see statement on page 21.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1					27.0	5.6	4.0	4.0	3.8	.1		
2					18.8	5.6	4.0	4.0	3.8	.1		
3					15.8	5.6	3.9	4.0	3.7	0		
4					15.8	5.6	3.8	3.9	3.6	0		
5					43.5	5.5	3.7	3.9	3.5	0		
6					235.0	5.5	3.6	3.9	3.4	0		
7					72.0	5.5	3.6	3.9	3.3	0		
8					143.0	5.4	3.6	3.9	3.2	0		
9					133.0	5.3	3.6	3.9	3.1	0		
10					59.0	5.2	3.6	3.9	3.0	0		
11					26.6	5.1	3.6	3.9	2.9	0		
12					17.5	5.0	3.6	3.9	2.8	0		
13					13.5	4.9	3.6	3.9	2.7	0		
14					11.5	5.2	3.6	3.9	2.6	0		
15					10.5	5.5	3.6	3.9	2.5	0		
16					6.1	5.3	3.6	3.9	2.4	0	No flow	No flow
17					1.8	5.0	3.6	3.9	2.3	0		
18					4.3	4.7	3.7	3.9	2.2	0		
19					6.8	4.7	3.7	3.9	2.0	0		
20					6.6	4.6	3.8	3.8	1.8	0		
21					6.4	4.6	3.8	3.8	1.7	0		
22					6.2	4.5	3.9	3.8	1.5	0		
23					6.2	4.5	4.0	3.8	1.3	0		
24					6.2	4.4	4.1	3.8	1.1	0		
25					6.1	4.4	4.2	3.8	1.0	0		
26					6.1	4.3	4.2	3.8	.8	0		
27					6.0	4.3	4.2	3.8	.7	0		
28					5.9	4.2	4.1	3.8	.5	0		
29					5.8	4.2	4.1	3.8	.3	0		
30						4.1	4.1	3.8	.2	0		
31						4.1		3.8		0		
Totals					923.0	152.4	114.5	120.0	67.7	0.2		
Mean					31.83	4.92	3.82	3.87	2.18	0		
Maximum					235.0	5.6	4.2	4.0	3.8	0.1		
Minimum					1.8	4.1	3.6	3.8	0.2	0		
Total acre-feet					1,830	302	227	240	134	0		

Total for period, 2,730 acre-feet.

DAILY DISCHARGE, IN SECOND-FEET, OF CAMPBELL CREEK NEAR ALVISO FOR THE PERIOD DECEMBER 1, 1931, TO SEPTEMBER 30, 1932

Location—Staff gage, reference point, lower face of concrete at center of span on upstream side of bridge at Mountain View-Alviso Road=7 10 feet.

Drainage area—62.6 square miles (12.2 square miles mountain and foothill area and 50.4 square miles valley area).

Records available—December 1, 1931, to September 30, 1932.

Extremes—Maximum observed discharge during period, 304 second-feet, February 9; no flow after May 30.

Remarks—Discharge curve well defined throughout. Some diversions above the station and during high stages of December and February, the stream overflowed its banks; see statement on page 21.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1			0	2.0	6 8	0 6	0.5	0.3				
2			0	2 8	3.4	.6	.4	.3				
3			0	1 3	5 1	.6	.4	.3				
4			0	.8	5.2	.6	.4	.3				
5			0	.1	6.8	.6	.4	.3				
6			0	0	158.0	.6	.4	.3				
7			0	0	66.0	.6	.4	.3				
8			0	0	129.0	.6	.4	.3				
9			0	0	216.0	.6	.4	.3				
10			0	0	75.0	.6	.4	.3				
11			0	0	34.0	.6	.4	.3				
12			0	0	20.0	.6	.4	.3				
13			0	0	15.5	.6	.4	.3				
14			0	0	14.0	.8	.4	.3				
15			0	163 0	11.5	.9	.4	.3				
16			0	25.4	7.3	.9	.4	.3				
17			0	3 9	3 1	.8	.3	.3	No flow	No flow	No flow	No flow
18			0	1.8	3.9	.8	.3	.3				
19			0	1 5	4.8	.8	.3	.3				
20			0	1 8	4.1	.7	.3	.3				
21			0	1 5	3.4	.7	.3	.3				
22			0	1.3	2 6	.6	.3	.3				
23			0	1.1	2.1	.6	.3	.2				
24			82.0	1.6	1.6	.6	.3	.2				
25			22.0	2 2	1 1	.5	.3	.2				
26			42.5	2.7	.6	.5	.3	.2				
27			260.0	3 2	.6	.5	.3	.1				
28			277 0	3 7	.6	.5	.3	.1				
29			86 0	4 2	.6	.5	.3	.1				
30			6.8	4 7		.5	.3	.1				
31			13 6	5 2		.5		0				
Totals			789.9	235 8	802 7	19.5	10 7	7.8				
Mean			25.48	7 61	27.68	0.63	0.35	0.25				
Maximum			277.0	163.0	216.0	.9	.5	.3				
Minimum			0	0	.6	.5	.3	0				
Total acre-feet			1,570	468	1,590	38 7	21.4	15.4				

Total for period, 3,700 acre-feet.

DAILY DISCHARGE, IN SECOND-FEET, OF SAN TOMAS CREEK—MAIN CHANNEL AT POLLARD ROAD FOR THE PERIOD FEBRUARY 1, TO SEPTEMBER 30, 1932

Location—Staff gage, reference point, lower face of concrete at center of span on upstream side of bridge at Pollard Road=7.50 feet.
Drainage area—0.8 square miles foothill area.
Records available—February 1, to September 30, 1932.
Extremes—Maximum observed discharge during period, 56 second-feet, February 6.
Remarks—Discharge curve well defined between 5 and 30 second-feet. Some diversions above the station; see statement on page 21.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1					10.4	1.5	0 7	1.0	0 4			
2					5 4	1.5	.7	1.0	0 3			
3					3.2	1.5	.7	1.0	0 3			
4					2.5	1.4	.7	1 0	0.3			
5					13 7	1 4	.7	.9	0 3			
6					34.2	1 4	.7	.9	0.2			
7					10.0	1.4	.7	.9	0.2			
8					32.5	1.3	.7	.9	0 2			
9					22.5	1.2	.7	.9	0.2			
10					10 8	1.1	.7	.9	0.2			
11					7.3	1.0	.7	.9	0 1			
12					6 0	.9	.7	.9	0.1			
13					4.4	.8	.7	.9	0 1			
14					3 9	.8	.7	.9	0 1			
15					2 9	.9	.7	.9	0 1			
16					2.9	.9	.7	.9	0 1	No flow	No flow	No flow
17					2 9	.8	.7	.9	0			
18					2.8	.8	.7	.9	0			
19					2.8	.8	.7	.9	0			
20					2 6	.8	.8	.9	0			
21					2.4	.8	.8	.9	0			
22					2 2	.8	.8	.9	0			
23					2.1	.8	.9	.8	0			
24					2 0	.8	.9	.8	0			
25					2 0	.8	1 0	.7	0			
26					1 9	.8	1 0	.7	0			
27					1 8	.7	1.0	.6	0			
28					1 7	.7	1.0	.6	0			
29					1.6	.7	1.0	.5	0			
30						.7	1.0	.5	0			
31						.7		.4				
Totals					201 4	30 5	23.5	25 8	3.2			
Mean					6.94	0 98	0 78	0 83	0.11			
Maximum					34 2	1 5	1 0	1 0	0.4			
Minimum					1 6	.7	.7	0 4	0			
Total acre-feet					399	60 2	46 4	51 0	6 5			

Total for period, 563 acre-feet.

DAILY DISCHARGE, IN SECOND-FEET, OF SAN TOMAS CREEK AT STEVENS CREEK ROAD FOR THE PERIOD FEBRUARY 5, TO SEPTEMBER 30, 1932

Location—Staff gage, reference point, top edge of upstream parapet of bridge at Stevens Creek Road=13.40 feet.
Drainage area—16.3 square miles (5.5. square miles foothill area and 10.8 square miles valley area).
Records available—February 5, to September 30, 1932.
Extremes—Maximum observed discharge 300 second-feet February 6; no flow after February 19.
Remarks—Rating curve fairly well defined. Some diversions above the station; see statement on page 21.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1												
2												
3												
4												
5					9 6							
6					89 0							
7					24 0							
8					122 0							
9					49 0							
10					17 1							
11					9 6							
12					6 1							
13					3 7							
14					3 4							
15					2 0							
16					1 0							
17					0							
18					0							
19					2 8							
20					0							
21					0							
22					0							
23					0							
24					0							
25					0							
26					0							
27					0							
28					0							
29					0							
30												
31												
Totals					339 3							
Mean					13 57							
Maximum					122							
Minimum					0							
Total acre-feet					673							

No flow

Total for period, 673 acre-feet.

DAILY DISCHARGE, IN SECOND-FEET, OF WEST FORK OF WILDCAT CREEK AT FRUITVALE (ODD FELLOW) AVENUE FOR THE PERIOD FEBRUARY 1, TO SEPTEMBER 30, 1932

Location—Staff gage, reference point, lower surface of concrete at center of upstream span of bridge at Fruitvale (Odd Fellow) Avenue=7.20 feet.

Drainage area—2.3. square miles (1.2 square miles mountain and foothill area and 1.1. square miles valley area).

Records available—February 1, to September 30, 1932.

Extremes—Maximum observed discharge during period 29 second-feet, February 8; no flow after March 25.

Remarks—Discharge curve well defined between 2 and 16 second-feet. Some diversions above the station; see statement on page 21.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1					6.3	0.5						
2					2.1	.5						
3					1.2	.5						
4					1.2	.5						
5					3.7	.4						
6					17.1	.4						
7					6.3	.4						
8					18.3	.4						
9					12.7	.3						
10					5.6	.3						
11					3.3	.2						
12					2.1	.2						
13					2.3	.1						
14					1.9	.2						
15					1.6	.3						
16					1.4	.3						
17					1.2	.2						
18					1.5	.1						
19					1.7	.1						
20					1.7	.1						
21					1.7	.1						
22					1.7	.1						
23					1.5	.1						
24					1.3	.1						
25					1.1	.1						
26					.9	0						
27					.8	0						
28					.7	0						
29					.6	0						
30						0						
31						0						
Totals					103.5	6.5						
Mean					3.57	0.30						
Maximum					18.3	.5						
Minimum					.6	0						
Total acre-feet					205	18.4						

Total for period 223 acre-feet.

DAILY DISCHARGE, IN SECOND-FEET, OF EAST FORK OF WILDCAT CREEK AT ALLENDALE AVENUE FOR THE PERIOD FEBRUARY 1, TO SEPTEMBER 30, 1932

Location—Staff gage, reference point, top and center of upstream parapet of bridge of Allendale Avenue=9.70 feet.
Drainage area—0.9 square miles valley area.
Records available—February 1, to September 30, 1932.
Extremes—Maximum observed discharge during period, 61 second-feet, February 6; no flow after February 17.
Remarks—Discharge curve well defined between 0 and 30 second-feet. Some diversions above the station; see statement on page 21.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1					9.2							
2					2.1							
3					.8							
4					1.3							
5					7.1							
6					30							
7					4.1							
8					34							
9					9.6							
10					1.3							
11					.8							
12					.4							
13					.2							
14					.2							
15					.1							
16					.1							
17					.1							
18					0							
19					0							
20					0							
21					0							
22					0							
23					0							
24					0							
25					0							
26					0							
27					0							
28					0							
29					0							
30												
31												
Totals					101.5							
Mean					3.50							
Maximum					34.1							
Minimum					0							
Total acre-feet					201							

No flow

Total for period, 201 acre-feet.

6—3390

DAILY DISCHARGE, IN SECOND-FEET, OF WEST FORK OF SMITH CREEK AT POLLARD ROAD FOR THE PERIOD FEBRUARY 1, TO SEPTEMBER 30, 1932

Location—Staff gage, reference point=edge of parapet, top surface, center of upstream span=9.00 feet.
Drainage area—0.8 square miles (0.7 square miles foothill area and 0.1 square miles valley area).
Records available—February 1, to September 30, 1932.
Extremes—Maximum observed discharge, 58 second-feet, February 6.
Remarks—Discharge curve well defined between 15 and 45 second-feet. Some diversions above the station; see statement on page 21.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1					0							
2					0							
3					0							
4					0							
5					2.0							
6					29.0							
7					6.0							
8					32.0							
9					12.0							
10					2.8							
11					1.8							
12					1.3							
13					1.0							
14					.8							
15					.6							
16					.5							
17					.4							
18					.3							
19					.2							
20					.2							
21					.1							
22					.1							
23					.1							
24					.1							
25					.1							
26					.1							
27					.1							
28					.1							
29					.1							
30												
31												
Totals					91.8							
Mean					3.17							
Maximum					32.0							
Minimum					0							
Total acre-feet					182							

No flow

Total for period, 182 acre-feet.

DAILY DISCHARGE, IN SECOND-FEET, OF EAST FORK OF SMITH CREEK AT POLLARD ROAD FOR THE PERIOD FEBRUARY 1, TO SEPTEMBER 30, 1932

Location—Staff gage, reference point, center of top upstream edge of parapet of bridge at Pollard Road, 135 feet west of San Tomas Avenue—7.85 feet.
Drainage area—0.4 square miles (0.2 square miles foothill area and 0.2 square miles valley area).
Records available—February 1, to September 30, 1932.
Extremes—Maximum observed discharge, 28 second-feet, February 6; no flow after February 24.
Remarks—Discharge curve fairly well defined between 0 and 25 second-feet. Some diversions above the station; see statement on page 21.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1					0							
2					0							
3					0							
4					0							
5					2.8							
6					14.8							
7					3.1							
8					13.6							
9					4.4							
10					1.2							
11					.9							
12					.4							
13					.2							
14					.1							
15					.1							
16					.2							
17					.2							
18					.3							
19					.3							
20					.3							
21					.3							
22					.2							
23					.1							
24					.1							
25					0							
26					0							
27					0							
28					0							
29					0							
30												
31												
Total					43.9							
Mean					1.51							
Maximum					14.8							
Minimum					0							
Total acre-feet					86.8							

No flow

Total for period, 86.8 acre-feet.

DAILY DISCHARGE, IN SECOND-FEET, OF COYOTE RIVER NEAR MADRONE

Location—About 1,500 feet above highway bridge at mouth of canyon, one-fourth mile below mouth of Los Animas Creek and about 2¾ miles northeast of Madrone. Stevens type water-stage recorder.

Drainage Area—193 square miles mountain and foothill area.

Records available—1902 to 1914 and 1916 to date. Records not published herein are available through the office of the United States Geological Survey.

Remarks—Accuracy should be good. There are no large diversions above the station; see statement on page 20.

Month	Discharge in second-feet			Run-off in acre-feet
	Max.	Min.	Mean	
Season of 1912-13—				
September	4.5	.03	.39	23
October	0.5	.00	.13	8
November	8.0	.4	.80	47
December	1.0	.3	.63	39
January	995 0	.9	32.38	1,988
February	10.5	6.5	8.40	466
March	11.0	6.0	7.74	475
April	10.0	5.6	7.90	469
May	5.6	2.2	3.88	238
June	2 2	.8	1.47	87
July	0.7	.00	.40	5
August				0
Total				3,845

Month	Discharge in second-feet			Run-off in acre-feet
	Max.	Min.	Mean	
Season of 1913-14—				
September				0
October				0
November	.7	.0	.35	9
December	7,900.0	.4	132 90	8,160
January	24,000 0	.1	1,730 00	106,200
February	10,500 0	30.0	1,062.00	58,900
March	810.0	55.0	178.20	10,940
April	82.0	24.0	39.94	2,375
May	24.0	14 0	16.81	1,032
June	14.0	9.4	11.71	696
July	9.4	5.3	6 90	424
August	5.1	4.1	4.49	278
Total				189,014

NOTE: The above records are furnished by H. L. Haehl, consulting engineer of San Francisco.

DAILY DISCHARGE, IN SECOND-FEET, OF COYOTE RIVER AT LOWER GORGE

Complete records are available through the office of United States Geological Survey, covering the years 1916 to 1923. The following records are furnished by H. L. Haehl, consulting engineer of San Francisco, from data presented in the case of Hayes-Chenoweth Co. v. Bay Cities Water Co.

Day	Period Feb. 1 to May 2, 1903			
	Feb.	Mar.	April	May
1	411	0	6,420	3
2	213	0	1,870	1
3	108	0	1,050	
4	92	0	601	
5	85	0	417	
6	74	17	233	
7	290	24	169	
8	497	20	144	
9	368	19	122	
10	154	18	114	
11	88	17	83	
12	73	9	66	
13	59	17	57	
14	35	135	50	
15	25	110	45	
16	21	92	43	
17	17	146	42	
18	13	95	39	
19	9	70	35	
20	5	54	25	
21	0	38	21	
22	0	32	19	
23	0	27	17	
24	0	38	15	
25	0	46	14	
26	0	38	12	
27	0	35	10	
28	0	72	8	
29		446	7	
30		2,540	5	
31		10,100		
Totals	2,640	14,300	11,800	
Mean	94	460	392	
Maximum	497	10,100	6,420	
Minimum	0	0	5	
Total acre-feet	5,240	28,300	23,300	

Day	Period Feb. 12 to April 30, 1904		
	Feb.	Mar.	April
1	0	43	136
2	0	17	114
3	0	1	98
4	0	0	62
5	0	0	47
6	0	0	34
7	0	0	33
8	0	0	24
9	0	0	18
10	0	1,420	15
11	0	968	14
12	257	260	11
13	511	133	6
14	31	67	2
15	14	47	1
16	231	34	0
17	80	16	0
18	9	64	0
19	0	552	32
20	0	820	91
21	0	570	42
22	0	291	28
23	0	993	16
24	0	1,010	12
25	52	799	8
26	65	410	8
27	386	266	10
28	227	256	6
29	91	367	3
30		339	2
31		195	
Totals	1,950	9,940	873
Mean	67	321	29
Maximum	511	1,420	136
Minimum	0	0	0
Total acre-feet	3,870	19,700	1,730

Day	Period Feb. 1 to April 1, 1905		
	Feb.	Mar.	April
1	223	0	29
2	1,190	0	
3	216	0	
4	52	0	
5	49	0	
6	105	0	
7	48	0	
8	16	0	
9	4	0	
10	0	0	
11	0	0	
12	0	0	
13	0	141	
14	0	312	
15	0	134	
16	0	234	
17	163	328	
18	213	289	
19	80	1,400	
20	103	596	
21	63	343	
22	31	237	
23	13	500	
24	7	105	
25	2	74	
26	0	52	
27	0	39	
28	0	24	
29		9	
30		129	
31		76	
Totals	2,580	5,000	
Mean	92	162	
Maximum	1,190	1,400	
Minimum	0	0	
Total acre-feet	5,110	9,960	

DAILY DISCHARGE, IN SECOND-FEET, OF COYOTE RIVER AT LOWER GORGE—Continued

Period Oct. 1, 1906, to June 20, 1907

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July
1			0	284	258	122	508	51	9	
2			0	186	842	119	442	49	9	
3			0	139	837	106	384	49	8	
4			0	120	615	170	333	49	6	
5			0	137	482	234	308	49	6	
6			0	119	392	277	276	49	4	
7			0	181	327	244	249	47	4	
8			0	745	290	225	228	43	4	
9			0	1,710	233	534	212	41	3	
10			0	1,520	206	1,420	195	39	3	
11			3,450	1,280	177	1,540	179	36	3	
12			1,420	680	151	1,300	167	36	3	
13			460	548	136	739	146	34	6	
14			250	1,280	127	546	137	30	8	
15			97	986	114	404	152	27	7	
16			62	644	114	427	134	26	7	
17			33	1,820	130	1,360	123	25	4	
18			16	1,240	107	1,250	116	24	3	
19			6	859	107	5,450	107	23	2	
20			2	761	95	2,520	97	23	1	
21			0	754	110	1,800	90	23		
22			0	845	211	1,360	85	23		
23			0	741	291	3,140	82	23		
24			0	870	215	4,350	77	22		
25			112	1,130	213	3,460	73	19		
26			1,000	715	187	1,810	71	19		
27			1,130	598	150	1,270	67	19		
28			387	734	130	993	65	19		
29			213	585		804	60	16		
30			185	479		687	56	13		
31			395	368		580		10		
Totals	No flow	No flow	9,220	23,100	7,250	39,200	5,220	956		
Mean			297	744	258	1,267	174	31		
Maximum			3,450	1,820	842	5,450	508	51		
Minimum			0	119	95	106	56	10		
Total acre-feet			18,300	45,700	14,400	77,800	10,300	1,900		

DAILY DISCHARGE, IN SECOND-FEET, OF COYOTE RIVER AT FORD ROAD BRIDGE, SOUTH OF EDENVALE

The following records are furnished by H. L. Haehl, consulting engineer of San Francisco, from data presented in the case of Hayes-Chenoweth Co. v. Bay Cities Water Co.

Day	Period Mar. 13 to Mar. 31, 1905	
	Mar.	April
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13	92	
14	380	
15	122	
16	189	
17	341	
18	319	
19	1,320	
20	744	
21	376	
22	255	
23	145	
24	94	
25	72	
26	46	
27	36	
28	23	
29	80	
30	129	
31	51	
Totals	4,810	
Mean	160	
Maximum	1,320	
Minimum	23	
Total acre-feet	9,540	

Day	Period Dec. 11, 1906, to July 6, 1907							
	Dec.	Jan.	Feb.	Mar.	April	May	June	July
1		376	335	135	609	61	15	.36
2		245	717	128	458	59	14	.27
3		196	854	148	415	58	13	.20
4		167	632	197	376	58	12	.14
5		169	500	282	339	57	10	.08
6		179	421	316	315	56	9	.02
7		205	369	285	342	53	8	
8		715	320	251	333	51	7	
9		1,720	277	467	254	49	6	
10		1,690	247	1,750	241	46	5	
11	2,620	1,350	221	1,660	226	45	6	
12	1,760	726	195	1,360	210	44	8	
13	540	566	169	794	194	43	11	
14	271	1,180	146	405	181	39	10	
15	149	1,040	130	462	173	37	10	
16	94	688	147	460	165	34	9	
17	56	1,780	153	1,460	159	32	9	
18	27	1,370	116	1,185	151	31	8 8	
19	6	859	110	6,450	139	30	7 0	
20	0	720	118	3,140	128	29	5 8	
21	0	675	127	1,950	121	28	4 9	
22	0	678	238	1,430	115	27	3 38	
23	0	692	335	3,000	109	27	2 74	
24	0	856	337	4,190	103	25	2 10	
25	43	1,450	259	3,840	97	23	1 64	
26	840	846	220	2,240	93	21	1 39	
27	873	646	190	1,490	88	19	1 16	
28	435	756	160	1,110	83	17	96	
29	261	637		843	76	16	76	
30	213	494		707	68	16	56	
31	394	458		585		15		
Totals	8,580	24,100	8,040	42,700	6,360	1,150	203	
Mean	277	779	287	1,380	212	37	6 80	
Maximum	2,620	1,780	854	4,190	609	61	15	
Minimum	0	167	110	128	68	15	.56	
Total acre-feet	17,000	47,900	15,900	84,700	12,600	2,270	403	

DAILY DISCHARGE, IN SECOND-FEET, OF COYOTE RIVER AT JULIAN STREET BRIDGE STATION (SAN JOSE)

Complete records are available through the office of United States Geological Survey covering the period December 20, 1916, to September 30, 1917. The following records are furnished by H. L. Haehl, consulting engineer of San Francisco, from data presented in the case of Hayes-Chenoweth Co. v. Bay Cities Water Co.

Day	Period Mar. 14 to Mar. 31, 1905	Day	Period June 29 to Sept. 30, 1906			
	Mar.		June	July	Aug.	Sept.
1		1		.85	.81	.72
2		2		.84	.80	.68
3		3		.83	.79	.64
4		4		.82	.78	.61
5		5		.81	.77	.61
6		6		.81	.76	.61
7		7		.81	.76	.61
8		8		.81	.76	.61
9		9		.81	.76	.61
10		10		.81	.76	.61
11		11		.81	.76	.61
12		12		.81	.76	.61
13		13		.81	.76	.60
14	294	14		.81	.76	.59
15	111	15		.81	.76	.58
16	138	16		.81	.76	.57
17	221	17		.81	.76	.56
18	239	18		.81	.76	.55
19	965	19		.81	.76	.56
20	774	20		.81	.76	.57
21	383	21		.81	.76	.58
22	209	22		.81	.76	.59
23	149	23		.81	.76	.60
24	107	24		.81	.76	.61
25	75	25		.81	.76	.62
26	48	26		.81	.76	.63
27	37	27		.81	.76	.63
28	21	28		.81	.76	.63
29	31	29	.58	.81	.76	.63
30	129	30	.80	.81	.76	.63
31	58	31		.81	.76	
Total	3,990	Totals		25 20	23 70	18 30
Mean	129	Mean		.81	.76	.62
Maximum	965	Maximum		.85	.81	.72
Minimum	21	Minimum		.81	76	55
Total acre-feet	7,910	Total acre-feet		50	47.	36

DAILY DISCHARGE, IN SECOND-FEET, OF COYOTE RIVER AT JULIAN STREET BRIDGE STATION (SAN JOSE)—Continued

Day	Period October 1, 1906, to August 31, 1907											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	63	92	92	262	373	179	606	78	18 0	2 2	70	
2	63	98	92	177	661	176	512	75	17 0	2 2	70	
3	63	1 04	92	122	1,080	160	436	71	16 0	2 1	70	
4	63	1 10	92	93	715	182	425	70	14 2	2 0	70	
5	63	1 10	92	118	528	282	401	69	13 2	2 0	70	
6	62	1 08	92	110	137	317	376	68	12 5	1 90	70	
7	62	1 06	92	110	377	280	249	67	11 7	1 80	70	
8	62	1 01	92	533	328	251	323	64	11 0	1 70	70	
9	62	1 02	92	1,610	288	318	300	61	10 3	1 70	70	
10	62	1 00	92	1,730	260	1,160	276	58	9 6	1 60	70	
11	62	98	2,050	1,600	228	1,950	258	56	8 9	1 50	70	
12	62	96	2,090	883	216	1,480	216	53	9 1	1 50	70	
13	62	94	612	654	202	917	237	49	9 5	1 50	70	
14	63	92	294	1,200	189	664	234	46	9 8	1 40	70	
15	63	92	155	1,210	179	549	225	44	10 2	1 40	70	
16	63	92	89	794	174	469	210	42	10 5	1 40	70	
17	63	92	36	1,950	188	1,370	188	40	10 9	1 10	70	
18	62	92	10 0	1,510	166	1,030	168	37	11 2	1 30	70	
19	61	92	7 1	944	147	5,590	148	35	10 1	1 30	70	
20	60	92	5 8	791	137	3,850	133	33	9 5	1 30	70	
21	59	92	4 4	769	146	2,230	125	33	8 6	1 20	70	
22	58	92	3 1	790	234	1,470	117	32	7 7	1 20	70	
23	57	92	1 74	785	350	2,680	115	31	6 8	1 20	70	
24	60	92	69	869	269	5,210	111	31	5 9	1 10	70	
25	63	92	60	1,340	250	4,210	106	29	5 0	1 10	70	
26	66	92	529	917	239	2,370	100	27	4 1	1 10	70	
27	69	92	1,120	688	209	1,630	94	25	3 2	1 10	70	
28	72	92	151	819	181	1,230	89	24	2 6	1 00	70	
29	75	92	221	691		978	84	22	2 4	1 00	70	
30	79	92	186	535		815	84	20	2 3	1 00	70	
31	83		282	437		701		18		1 00	70	
Totals	19 9	28 9	8,160	25,100	8,750	45,100	7,100	1,410	282 0	45 2	21 7	
Mean	64	96	263	810	313	1,450	237	45	9 4	1 46	70	
Maximum	83	1 10	2,090	1,950	1,080	5,590	606	78	18 0	2 2	70	
Minimum	57	92	60	93	137	160	84	18	2 3	1 00	70	
Total acre-feet	39	57	16,200	49,800	17,400	89,300	14,100	2,790	559	90	43	

DAILY DISCHARGE, IN SECOND-FEET, OF LAGUNA SECA AT COYOTE

Incomplete records are available through the office of United States Geological Survey covering the period from December 20, 1916, to August 14, 1918. (Occasional discharge measurements only.)

The following records are furnished by H. L. Haehl, consulting engineer of San Francisco, from data presented in the case of Hayes-Chenoweth Co. v. Bay Cities Water Company.

Day	Period Mar. 13 to Mar. 31, 1905	Day	Period June 29 to Sept. 30, 1906			
	Mar.		June	July	Aug.	Sept.
1		1		8.78	2.72	1.15
2		2		8.24	2.46	1.05
3		3		7.90	2.39	.95
4		4		7.96	2.36	.85
5		5		7.02	2.33	.81
6		6		6.58	2.30	.79
7		7		6.08	2.28	.77
8		8		5.21	2.26	.75
9		9		4.33	2.24	.74
10		10		4.18	2.11	.73
11		11		4.11	1.99	.71
12		12		4.04	1.87	.69
13	1.15	13		3.95	1.75	.66
14	2.42	14		3.93	1.63	.63
15	5.61	15		3.88	1.56	.60
16	6.10	16		3.69	1.50	.58
17	5.96	17		3.57	1.46	.55
18	5.30	18		3.59	1.41	.52
19	4.49	19		3.45	1.37	.52
20	4.98	20		3.24	1.32	.58
21	5.39	21		3.17	1.28	.63
22	5.22	22		3.15	1.23	.69
23	5.13	23		3.13	1.20	.74
24	5.20	24		3.11	1.21	.80
25	5.18	25		3.09	1.22	.85
26	4.96	26		3.05	1.23	.84
27	5.00	27		3.00	1.25	.90
28	5.00	28		2.96	1.26	.90
29	6.25	29	7.85	2.92	1.26	.90
30	6.20	30	9.15	2.88	1.23	.90
31	3.49	31		2.84	1.21	
Totals	93.50	Totals		137.03	52.9	22.8
Mean	3.00	Mean		4.42	1.71	.76
Maximum	6.25	Maximum		8.78	2.72	1.15
Minimum	1.15	Minimum		2.84	1.20	.52
Total acre-feet	184	Total acre-feet		272	105	45.2

DAILY DISCHARGE, IN SECOND-FEET, OF LAGUNA SECA AT COYOTE—Continued

Period October 1, 1906, to August 31, 1907

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	92	.79	69	27	26	27	49	22	13	8 52	3 67	
2	.94	.77	68	18	39	27	47	22	13	8 16	3 61	
3	97	.75	67	19	41	27	41	22	13	7 80	3 55	
4	.98	.73	66	17	29	29	38	22	13	7 44	3 49	
5	.97	.71	65	20	32	35	38	22	13	7 08	3.42	
6	.94	70	65	21	29	32	40	22	13	6 75	3 34	
7	.90	.70	.66	32	28	29	35	22	12	6 57	3 26	
8	87	69	67	79	28	28	31	22	12	6.43	3 18	
9	82	.68	68	117	28	32	27	22	12	6 29	3 10	
10	.78	67	69	111	26	45	27	22	12	6.15	3.02	
11	76	66	9 60	79	25	97	25	22	12 8	6.01	2 95	
12	74	.65	135	44	25	76	23	21	13.9	5 87	2 87	
13	.72	.64	65	47	25	51	23	20	15 0	5 73	2 79	
14	69	63	29	163	24	39	22	19	16 1	5 61	2 71	
15	67	62	19	136	24	35	22	18	15.3	5 50	2 63	
16	65	.63	15	62	24	36	22	17	14 3	5 39	2 55	
17	63	65	13	229	26	88	22	17	13.3	5 28	2 47	
18	63	.67	12	214	25	92	22	17	12.3	5 17	2.39	
19	59	.69	12	144	24	407	22	17	11.3	5 06	2.31	
20	55	71	12	84	22	275	22	17	11 1	4 95	2.32	
21	52	71	12	38	25	206	22	16	10 8	4 84	2.33	
22	.48	71	11	31	31	107	22	16	10.5	4 73	2 31	
23	45	71	11	29	38	216	22	16	10 2	4 62	2.35	
24	42	.71	14	29	29	337	22	16	9 9	4 51	2 36	
25	.48	.71	35	34	22	217	22	16	9 6	4.40	2 37	
26	54	71	65	30	28	139	22	15	9.33	4 33	2.38	
27	59	.70	40	30	27	95	22	15	9 19	4.20	2.39	
28	65	.70	33	37	26	71	22	15	9 10	4 09	2 40	
29	71	.70	27	31		60	22	15	9.01	3.98	2.40	
30	.77	.70	26	30		52	22	15	8.92	3 87	2.40	
31	.81		26	27		50		14		3 76	2 37	
Totals	22 1	20 8	628	2,010	776	3,090	818	574	358	173	86 7	
Mean	71	.69	20	65	28	100	27	19	11.9	5 6	2.8	
Maximum	98	.79	135	229	41	407	49	22	16 1	8 52	3 67	
Minimum	42	.62	.65	17	22	27	22	14	8 92	3.76	2 31	
Total acre-feet	44	41	1,250	3,990	1,540	6,120	1,620	1,140	710	343	170	

DAILY DISCHARGE, IN SECOND FEET, OF SILVER CREEK AT LOUP AVENUE FOR THE PERIOD FEBRUARY 1, TO SEPTEMBER 30, 1932

Location—Staff gage at bridge at Loup Avenue. Reference point edge of flat parapet top, upstream side, 4.85 feet.
Drainage area—6.2 square miles (5.6 square miles mountain and foothill area and 0.6 square miles valley area).
Records available—February 1, to September 30, 1932.
Extremes—Maximum observed discharge, 22 second-feet, February 8; no flow after February 24.
Remarks—Rating curve well defined. Some diversions above the station; see statement on page 21.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1					3.1							
2					1.9							
3					.4							
4					.3							
5					.4							
6					2.7							
7					1.7							
8					10.4							
9					9.0							
10					1.7							
11					.8							
12					.6							
13					.6							
14					.5							
15					.5							
16					.4							
17					.4							
18					.3							
19					.3							
20					.3							
21					.3							
22					.2							
23					.2							
24					.1							
25					0							
26					0							
27					0							
28					0							
29					0							
30												
31												
Totals					37.1							
Mean					1.28							
Maximum					10.4							
Minimum					0							
Total acre-feet					73.6							

No flow

Total for period, 73.6 acre-feet.

DAILY DISCHARGE, IN SECOND-FEET, OF DRY CREEK NEAR EVERGREEN FOR THE PERIOD FEBRUARY 1, TO SEPTEMBER 30, 1932

Location—Staff gage at Cadwalder Avenue bridge. Reference point at center of upstream side of bridge; top edge of lowest projection=17.80 feet.
Drainage area—14.5 square miles (12.2 square miles mountain and foothill area and 2.3 square miles valley area).
Records available—February 1, to September 30, 1932.
Extremes—Maximum observed discharge, 30 second-feet February 8.
Remarks—Rating curve well defined. Some diversions above the station; see statement on page 21.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1					3.8	No flow	No flow	No flow	No flow	No flow	No flow	No flow
2					3.3							
3					1.7							
4					1.5							
5					1.3							
6					3.3							
7					2.9							
8					14.6							
9					14.6							
10					5.4							
11					3.1							
12					2.1							
13					1.3							
14					1.0							
15					.8							
16					.2							
17					0							
18					0							
19					0							
20					0							
21					0							
22					0							
23					0							
24					0							
25					0							
26					0							
27					0							
28					0							
29					0							
30												
31												
Totals					60.9							
Mean					2.10							
Maximum					14.6							
Minimum					0							
Total acre-feet					121							

DAILY DISCHARGE, IN SECOND-FEET, OF SILVER-DRY CREEK AT EAST SANTA CLARA STREET FOR THE PERIOD DECEMBER 1, 1931 TO SEPTEMBER 30, 1932

Location—Staff gage, at bridge at East Santa Clara Street, San Jose. Reference point, top SE. corner of west upstream concrete post of bridge=8.45 feet.

Drainage area—43.3 square miles (28.8 square miles mountain and foothill area and 14.5 square miles valley area).

Records available—December 1, 1931, to September 30, 1932.

Extremes—Maximum observed discharge, 100 second-feet, February 8; no flow after February 13.

Remarks—Rating curve well defined between 5 and 95 second-feet. Some diversions above the station and during high stages the stream overflows its banks. A small amount of water is diverted below the station; see statement on page 21.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1			0	0	17.5							
2			0	0	6.7							
3			0	0	.4							
4			0	0	0							
5			0	0	0							
6			0	0	25.8							
7			0	0	14.2							
8			0	0	61.0							
9			0	0	70.0							
10			0	0	18.8							
11			0	0	3.3							
12			0	0	.4							
13			0	0	.1							
14			0	0	0							
15			0	39.2	0							
16			0	10.0	0							
17			0	0	0							
18			0	0	0							
19			0	0	0							
20			0	0	0							
21			0	0	0							
22			0	0	0							
23			0	0	0							
24			0	0	0							
25			0	0	0							
26			0	0	0							
27			40.4	0	0							
28			10.4	0	0							
29			2.5	0	0							
30			.8	0								
31			0	0								
Totals			54.1	49.2	218.2							
Mean			1.75	1.59	7.52							
Maximum			40.4	39.2	70.0							
Minimum			0	0	0							
Total acre-feet			108	97.8	433							

No flow

Total for period, 639 acre-feet.

DAILY DISCHARGE, IN SECOND-FEET, OF PENITENCIA CREEK AT UPPER STATION FOR THE PERIOD FEBRUARY 1, TO SEPTEMBER 30, 1932

Location—Staff gage at first Peninsular Railway bridge above Toyon Avenue. Reference point, top of nut on trolley wire pole stirrup near base of pole at north downstream side of bridge elevation—13.70 feet.

Drainage area—23.0 square miles, mountain and foothill area.

Records available—February 1, to September 30, 1932.

Extremes—Maximum observed discharge, 267 second-feet, February 6.

Remarks—Rating curve fairly well defined between 40 and 270 second-feet. No water is diverted above the station; see statement on page 21.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1					87.0	6.6	3.1	15.1	2.0			
2					73.5	6.5	3.0	16.5	1.7			
3					50.0	6.4	2.9	18.0	1.6			
4					41.6	6.3	2.9	6.9	1.5			
5					69.0	6.2	2.8	6.7	1.4			
6					180.0	6.0	2.7	6.6	1.3			
7					140.0	5.9	2.7	6.4	1.2			
8					132.5	5.8	2.6	6.2	1.1			
9					123.5	5.7	2.6	6.1	1.0			
10					73.3	5.6	2.5	5.9	.9			
11					50.8	5.5	2.9	5.8	.8			
12					37.9	5.4	3.4	5.6	.7			
13					26.6	5.3	3.8	5.4	.6			
14					23.2	6.0	4.3	5.3	.5			
15					20.5	6.6	4.7	5.1	.4			
16					18.3	6.3	4.1	5.0	.3			
17					16.5	6.0	5.6	4.8	.2			
18					15.0	5.7	5.7	4.6	.1	No flow	No flow	No flow
19					13.0	5.4	5.8	4.5	0			
20					12.4	5.1	6.0	4.3	0			
21					11.8	4.8	6.1	4.2	0			
22					11.2	4.5	6.2	4.0	0			
23					10.4	4.2	6.3	3.8	0			
24					9.7	4.1	6.5	3.6	0			
25					8.9	3.9	6.6	3.4	0			
26					8.2	3.8	8.0	3.2	0			
27					7.8	3.6	9.4	3.0	0			
28					7.4	3.5	10.7	2.8	0			
29					7.0	3.4	12.3	2.6	0			
30						3.2	13.7	2.4	0			
31						3.1		2.2				
Totals					1,287.0	160.4	159.9	180.0	17.3			
Mean					44.38	5.17	5.33	5.81	0.58			
Maximum					180.0	6.6	13.7	18.0	2.0			
Minimum					7.0	3.1	3.1	2.2	0			
Total acre-feet					2,550	318	317	357	34.5			

Total for period, 3,580 acre-feet.

DAILY DISCHARGE, IN SECOND-FEET, OF PENITENCIA CREEK AT CAPITOL AVENUE FOR THE PERIOD DECEMBER 1, 1931, TO SEPTEMBER 30, 1932

Location—Staff gage, reference point, lower surface of concrete at center of downstream arch of bridge at Capitol Avenue=6.40 feet.
Drainage area—24.2 square miles (23.5 square miles mountain and foothill area and 0.7 square miles valley area).
Records available—December 1, 1931, to September 30, 1932.
Extremes—Maximum observed discharge, 336 second-feet, January 15, 1932; no flow after February 21.
Remarks—Rating curve well defined between 6 and 230 second-feet. Some diversions above the station; see statement on page 21.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1			0	13.3	69.0							
2			0	23 3	54 4							
3			0	20 8	36.0							
4			0	5.4	29.6							
5			0	1.7	46.5							
6			0	.2	150.0							
7			0	0	116.0							
8			0	0	100.0							
9			0	0	106.0							
10			0	0	67.0							
11			0	0	43.2							
12			0	0	27.2							
13			0	0	24.2							
14			0	0	22.9							
15			0	105.0	21.2							
16			0	60 0	15.0							
17			0	28.4	9.2							
18			0	33 4	7.0							
19			0	29.2	5.2							
20			0	18 3	3.5							
21			0	9 2	1.8							
22			0	5.8	0							
23			0	2 5	0							
24			32.5	1.6	0							
25			38 4	1.0	0							
26			10.4	.3	0							
27			120.0	0	0							
28			230.0	0	0							
29			51.6	0	0							
30			9.2	0								
31			29.6	0								
Totals			521.7	359.4	954.9							
Mean			16.82	11 59	32.93							
Maximum			230.0	105 0	150.0							
Minimum			0	0	0							
Total acre-feet			1,030	713	1,890							

No flow

Total for period, 3,630 acre-feet.

DAILY DISCHARGE, IN SECOND-FEET, OF PENITENCIA CREEK AT LOWER STATION FOR THE PERIOD FEBRUARY 1, TO SEPTEMBER 30, 1932

Location—Staff gage, at Peninsular Railway bridge near King Road. Reference point, top edge of timber on top of ties=9.00 feet.
Drainage area—25.7 square miles (23.5 square miles mountain and foothill area and 2.2. square miles valley area).
Records available—February 1, to September 30, 1932.
Extremes—Maximum observed discharge, 192 second-feet, February 6; no flow after February 18.
Remarks—Rating curve well defined between 20 and 190 second-feet. Some diversions above the station; see statement on page 21.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1					25.0							
2					25.0							
3					15.8							
4					16.7							
5					35.8							
6					119.0							
7					77.0							
8					75.0							
9					105.0							
10					45.0							
11					19.2							
12					8.3							
13					6.7							
14					7.5							
15					5.8							
16					3.0							
17					.2							
18					.1							
19					0							
20					0							
21					0							
22					0							
23					0							
24					0							
25					0							
26					0							
27					0							
28					0							
29					0							
30												
31												
Totals					590.1							
Mean					20.35							
Maximum					119.0							
Minimum					0							
Total acre-feet					1,170							

No flow

Total for period, 1,170 acre-feet.

DAILY DISCHARGE, IN SECOND-FEET, OF BERRYESSA CREEK AT PIEDMONT ROAD FOR THE PERIOD FEBRUARY 1, TO SEPTEMBER 30, 1932

Location—Staff gage at Piedmont Road bridge. Referenee point, center of upstream side of bridge, upper edge of lowest projection, 7.75 feet.
Drainage area—4.7 square miles of mountain and foothill area.
Records available—February 1, to September 30, 1932.
Extremes—Maximum observed discharge, 78 second-feet, February 6.
Remarks—Rating curve fairly well defined. Some diversions above the station; see statement on page 21.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1					7.1	0.9	0.5	0.3	0.1			
2					11.2	.9	.5	0.3	1			
3					8.3	.9	5	1.6	.1			
4					10.4	.9	5	.6	0			
5					20.0	.9	.5	.4	0			
6					33.7	.9	.5	.4	0			
7					13.7	.9	.5	.4	0			
8					25.8	.8	.5	.3	0			
9					11.2	.8	.5	.3	0			
10					4.6	.8	.5	.3	0			
11					3.7	.8	.4	.3	0			
12					2.5	.8	.4	.3	0			
13					2.2	.7	.4	.3	0			
14					1.7	.8	.4	.3	0			
15					1.7	.9	3	.3	0			
16					1.4	.9	3	.3	0			
17					1.1	.9	3	.2	0			
18					1.1	.9	3	.2	0			
19					1.1	.8	3	.2	0			
20					1.1	.8	3	.2	0			
21					1.1	.7	3	.2	0			
22					1.1	.7	3	.2	0			
23					1.0	.7	3	.2	0			
24					.9	.6	3	.2	0			
25					.9	6	3	.2	0			
26					.8	.5	3	.2	0			
27					.8	.5	3	.1	0			
28					.8	.5	3	.1	0			
29					.9	.5	3	.1	0			
30						.5	.3	.1	0			
31						.5		.1				
Totals					171.9	23.3	11.4	9.2	0.3			
Mean					5.93	0.75	0.38	0.30	0.01			
Maximum					33.7	0.9	0.5	1.6	0.1			
Minimum					0.8	0.5	0.3	0.1	0			
Total acre-feet					341	46.1	22.6	18.4	0.6			

Total for period, 429 acre-feet.

DAILY DISCHARGE, IN SECOND-FEET, OF BERRYESSA CREEK AT OAKLAND HIGHWAY FOR THE YEAR ENDING SEPTEMBER 30, 1932

Location—Staff gage at culvert at Oakland Highway. Reference point, top and middle of upstream culvert parapet = 6.55 feet.

Drainage area—13 square miles (6.4 mountain and foothill area and 6.6 square miles valley area).

Records available—October 1, 1931, to September 30, 1932.

Extremes—Maximum observed discharge, 35 second-feet, February 8, 1932.

Remarks—Rating curve well defined. No flow at this station during rain of December 24–January 1. At high stages of February this stream overflowed its banks above the Oakland Highway, and at all but lowest stages it overflowed just below the highway. Some diversions above the station and during high stages the stream overflows its banks. See statement on page 21.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1				0	5.1							
2				0	2.6							
3				0	1.3							
4				0	.9							
5				0	4.5							
6				0	19.1							
7				0	7.1							
8				0	20.0							
9				0	13.8							
10				0	4.4							
11				0	2.4							
12				0	1.6							
13				0	1.2							
14				0	.4							
15				10.2	.1							
16				3.5	.1							
17				.6	0							
18				.2	0							
19				0	0							
20				0	0							
21				0	0							
22				0	0							
23				0	0							
24				0	0							
25				0	0							
26				0	0							
27				0	0							
28				0	0							
29				0	0							
30				0	0							
31				0								
Totals	No flow	No flow	No flow	14.5	84.6	No flow	No flow	No flow	No flow	No flow	No flow	No flow
Mean				0.47	2.92							
Maximum				10.2	20.0							
Minimum				0	0							
Total acre-feet				28.9	168							

Total for period, 197 acre-feet.

DAILY DISCHARGE, IN SECOND-FEET, OF BERRYESSA CREEK AT MILPITAS FOR THE PERIOD FEBRUARY 3, TO SEPTEMBER 30, 1932

Location—Staff gage at Milpitas-Alviso Road bridge. Reference point, center of and top of downstream parapet, 7.00 feet.

Drainage area—15.2 square miles (6.4 square miles mountain and foothill area and 8.8 square miles valley area).

Records available—February 3, to September 30, 1932.

Extremes—Maximum observed discharge, 12 second-feet, February 9.

Remarks—Rating curve well defined. The channel at this point is capable of carrying only a small fraction of the discharge at high stages. The stream overflows just below the Oakland Highway and inundates a square mile or more west of the Oakland Highway and south of Alviso-Milpitas Road, most of the water reaching the bay through drainage ditches. See statement on page 21.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1						0						
2						0						
3					0.7	0						
4					.7	0						
5					1.0	0.1						
6					3.0	.1						
7					2.9	.1						
8					5.8	0						
9					9.7	0						
10					3.1	0						
11					.8	0						
12					.5	0						
13					.4	0						
14					.2	0						
15					.1	0						
16					.1	0						
17					0	0						
18					0	0						
19					0	0						
20					0	0						
21					0	0						
22					0	0						
23					0	0						
24					0	0						
25					0	0						
26					0	0						
27					0	0						
28					0	0						
29					0	0						
30						0						
31						0						
Totals					29.0	.3						
Mean					1.00	0.01						
Maximum					9.7	0.1						
Minimum					0	0						
Total acre-feet					57.5	0.6						

No flow

Total for period, 58.1 acre-feet.

APPENDIX D

PERCOLATION DATA

PERCOLATION TEST ON SAN ANTONIO CREEK

Location of Measuring Stations—

STATION No. 1—50 feet from upstream side of bridge at San Francisco highway—i.e., 50 feet from rated gaging station.

STATION No. 2—Downstream side of Burke Avenue Bridge, Los Altos. Same location as the rated gaging station.

STATION No. 3—25 feet from upstream side of bridge at Middlefield Road—i.e., 25 feet from rated gaging station.

STATION No. 4—At the intersection of Pine Lane (Coloff Road) with San Antonio Creek.

Measurements Made—

Station	Date	Time	Discharge in cubic feet per second
2	Feb. 2, 1932	9.13 a.m.	6.15
4	Feb. 2, 1932	10.10 a.m.	5.05
1	Feb. 2, 1932	11.05 a.m.	4.91
3	Feb. 2, 1932	12.00 m.	3.55
2	Feb. 2, 1932	1.38 p.m.	5.97
4	Feb. 2, 1932	2.53 p.m.	5.12
1	Feb. 2, 1932	3.45 p.m.	5.01

Percolation Losses—

Between stations	Channel length, miles	Area flooded, acres	Loss in cubic feet per second		
			C.F.S.	Per mile	Per acre
2 and 4	0.98	0.69	0.96	0.98	1.39
4 and 1	1.18	*0.87	*0.15	*0.12	*0.17
1 and 3	1.26	0.94	1.38	1.09	1.47

Maximum total observed rate of percolation, 2.49 cubic feet per second.

NOTE—The indicated losses between stations were determined from interpolated flow at 12.00 m. at stations 1, 2 and 4 and from a single measurement at Station 3 at 12.00 m.

* It appears that springs or invisible accretions are responsible for the observed low rate of percolation between Stations 1 and 4.

PERCOLATION TEST ON PERMANENTE CREEK

Location of Measuring Stations—

STATION No. 1—Under Peninsular Railway culvert at Loyola—same location as rated gaging station.

STATION No. 2—At intake of Permanente Orchard Company ditch. Directly opposite end of Berry Avenue.

Measurements Made—

Station	Date	Time	Discharge in cubic feet per second
1	Jan. 16, 1932	11.13 a.m.	13.01
2	Jan. 16, 1932	1.23 p.m.	8.78

Percolation Losses—

Between stations	Channel length, miles	Area flooded, acres	Loss in cubic feet per second		
			C.F.S.	Per mile	Per acre
1 and 2	0.77	0.93	4.23	5.49	4.55

NOTE—Conditions for making percolation tests on Permanente Creek were not favorable at any time, due to the numerous and variable diversions for irrigation throughout the length of the channel. At the time of making this test it was believed that conditions were as nearly stable as they were ever likely to be. The stage at Loyola remained constant until late in the afternoon of January 16th and no pumps were operating between the two stations during the progress of the test. A small quantity of water had been allowed to pass the Permanente Dam in the forenoon but throughout the test the entire stream was being diverted at this point.

PERCOLATION TESTS ON STEVENS CREEK

Location of Measuring Stations—

STATION No. 1—60 feet upstream from McLellan Road Bridge.

STATION No. 2—10 feet downstream from first bridge above McLellan Road Bridge and near U. S. G. S. Gaging Station.

STATION No. 3—200 feet downstream from center of bridge at Stevens Creek Road.

STATION No. 4—50 feet from upstream side of Homestead Road Bridge (virtually the same location as the rated gaging station).

STATION No. 4A—200 feet downstream from Station No. 4 (measurement made at this point to ascertain the magnitude of a diversion occurring between Stations Nos. 4 and 4A.

STATION No. 5—In the Losse Ditch, 1,400 feet downstream from the Losse Dam or 150 feet upstream from Fremont Avenue.

Measurements Made—

Station	Test No.	Date	Time	Discharge in cubic feet per second
1	1	Feb. 23, 1930	9.30 a.m.	17.0
2	1	Feb. 23, 1930	12.00 m.	18.6
4A	2	Jan. 27, 1932	10.08 a.m.	3.41
4	2	Jan. 27, 1932	11.00 a.m.	5.11
3	2	Jan. 27, 1932	12.55 p.m.	7.68
1	2	Jan. 27, 1932	2.15 p.m.	12.25
5	2	Jan. 27, 1932	3.48 p.m.	1.74
1	2	Jan. 28, 1932	11.20 a.m.	10.87
3	2	Jan. 28, 1932	12.20 p.m.	6.33
4	2	Jan. 28, 1932	2.05 p.m.	3.53
5	2	Jan. 28, 1932	2.58 p.m.	0.46

NOTE—The measurement at Station 4A was made to determine the discharge of a pump diverting between Stations 4 and 4A which operated continuously throughout the test.

Percolation Losses—

Test No.	Between stations	Channel length, miles	Area flooded, acres	Loss in cubic feet per second		
				C.F.S.	Per mile	Per acre
[a]1	2 and 1	0.8	2.0	1.7	2.1	0.8
[b]2	1 and 3	0.91	1.96	4.58	5.03	2.34
	3 and 4	1.15	2.18	2.69	2.34	1.23
[c]	4 and 5	1.06	2.08	1.36	1.96	0.65
	1 and 5	3.12	6.22	8.63	2.77	1.39

Maximum total observed rate of percolation, 10.33 cubic feet per second.

[a] Test No. 1 represents a single set of measurements.

[b] Test No. 2 represents two series of measurements taken on successive days. The loss between stations was determined by plotting discharge curves from which the mean for the period of observation was obtained. The loss as given between Stations 4 and 5 takes into consideration a diversion of 1.70 cubic feet per second, as determined by measurement at Station 4A.

[c] The section Station 4 to Station 5 is 1,400 feet of Losse Ditch.

PERCOLATION TESTS ON CALABAZAS CREEK

Location of Measuring Stations

STATION No. 1—Under bridge at Prospect Road.

STATION No. 2—Twenty feet from upstream side of a bridge crossing Calabazas Creek at a point due west from intersection of Pierce Road with Mountain View and Saratoga Highway.

STATION No. 3—Fourth bridge on Pierce Road upstream from intersection of Pierce Road with Mountain View and Saratoga Highway. Under bridge.

STATION No. 4—50 feet upstream from center line of bridge at Bollinger Road.

STATION No. 5—300 feet upstream from center line of bridge at Stevens Creek Road.

STATION No. 6—Under bridge at Homestead Road.

STATION No. 7—20 feet from upstream side of bridge at San Francisco Highway.

Measurements Made—

Station	Test No.	Date	Time	Discharge in cubic feet per second
3	1	Feb. 4, 1932	9.30 a.m.	1.42
2	1	Feb. 4, 1932	11.10 a.m.	1.56
1	1	Feb. 4, 1932	12.15 p.m.	0.20
3	1	Feb. 4, 1932	4.33 p.m.	1.19
2	1	Feb. 4, 1932	5.10 p.m.	1.22
7	2	Feb. 12, 1932	8.28 a.m.	0.52
6	2	Feb. 12, 1932	9.45 a.m.	0.73
5	2	Feb. 12, 1932	10.35 a.m.	0.81
4	2	Feb. 12, 1932	11.43 a.m.	1.82
1	2	Feb. 12, 1932	3.15 p.m.	1.90

Percolation Losses—

Test No.	Between stations	Channel length, miles	Area flooded, acres	Loss in cubic feet per second		
				C.F.S.	Per mile	Per acre
[a]1	3 and 2	0.67	0.52	[b]0.17		
	2 and 1	1.21	1.35	1.30	1.12	0.96
[c]2	1 and 4	1.30	0.80	0.08	0.06	0.10
	4 and 5	1.12	0.96	1.01	0.90	1.05
	5 and 6	1.36	1.10	0.08	0.06	0.07
	6 and 7	1.51	1.17	0.21	0.14	0.18

Maximum total observed rate of percolation, 2.68 cubic feet per second.

[a] Test No. 1, between Stations 3 and 2 represents the difference in flow at 12.15 p.m. obtained by interpolation between the two measurements at each station. Between Stations 2 and 1 the indicated loss is obtained from the interpolated flow at Station 2 at 12.15 p.m. and the single measurement at Station 1 at 12.15 p.m. Seepage from banks and the presence of springs was observed above Station 2.

[b] This figure represents accretions.

[c] The stage was practically constant during Test 2, it being observed that during the 24 hours immediately preceding there was a drop in stage of only .09 feet at the Mountain View and Saratoga Highway, .01 feet between 8.20 a.m. and 2.30 p.m. and .01 feet between 2.30 p.m. and 5.35 p.m. during the progress of the test and .06 feet during the 17 hours immediately following the test.

PERCOLATION TESTS ON CAMPBELL (SARATOGA) CREEK

Location of Measuring Stations—

STATION No. 1—10 feet upstream from Cox Avenue Bridge.

STATION No. 2—1,080 feet upstream from Cox Avenue bridge.

STATION No. 3—Upstream Side of bridge at Cupertino, Saratoga Road—same location as the rated gaging station.

STATION No. 4—440 feet downstream from center of Herriman Avenue.

STATION No. 5—1,400 feet downstream from center of Herriman Avenue at a private Road which fords the creek and meets the Santa Clara-Saratoga Road at a point 2,100 feet south of the end of Fruitvale Avenue (Odd Fellow Avenue) near the residence of Mr. J. W. Cox.

STATION No. 6—100 feet from upstream side of bridge at Cox Avenue. This is 60 feet upstream from Station No. 1, as used in 1930.

STATION No. 7—1,309 feet downstream from upstream side of bridge at Cox Avenue and 75 feet downstream from the Sorosis flume.

STATION No. 8—1,954 feet upstream from center of Bollinger Road bridge and just above the Pettit Dam.

STATION No. 9—Under the Bollinger Road bridge.

STATION No. 10—300 feet upstream from the center of the Peninsular Railroad bridge at Stevens Creek Road.

STATION No. 11—500 feet upstream from center of Homestead Road bridge.

STATION No. 12—300 feet upstream from center of bridge at San Francisco Highway.

Measurements Made —

Station	Test No.	Date	Time	Discharge in cubic feet per second
1	1	Jan. 17, 1930	11.00 a.m.	11.1
2	1	Jan. 17, 1930	2.00 p.m.	11.3
1	1	Jan. 18, 1930	9.00 a.m.	7.4
2	1	Jan. 18, 1930	10.00 a.m.	8.1
1	1	Jan. 19, 1930	9.15 a.m.	5.8
2	1	Jan. 19, 1930	9.25 a.m.	6.7
1	1	Jan. 20, 1930	11.30 a.m.	2.9
2	1	Jan. 20, 1930	12.15 p.m.	3.5
3	2	Jan. 13, 1932	1.10 p.m.	8.74
6	2	Jan. 13, 1932	12.33 p.m.	6.54
5	3	Jan. 23, 1932	3.08 p.m.	12.43
6	3	Jan. 23, 1932	4.20 p.m.	8.18
6	3	Jan. 24, 1932	2.05 p.m.	8.88
5	3	Jan. 24, 1932	3.05 p.m.	12.58
3	3	Jan. 24, 1932	4.08 p.m.	11.94
6	3	Jan. 25, 1932	8.45 a.m.	7.71
5	3	Jan. 25, 1932	10.15 a.m.	10.57
3	3	Jan. 25, 1932	11.23 a.m.	10.15
6	3	Jan. 26, 1932	8.53 a.m.	6.80
5	3	Jan. 26, 1932	10.00 a.m.	11.23
3	3	Jan. 26, 1932	11.20 a.m.	10.39
7	4	Feb. 15, 1932	9.15 a.m.	15.96
8	4	Feb. 15, 1932	11.00 a.m.	[a]13.55
9	4	Feb. 15, 1932	12.00 m.	[a]6.64
10	4	Feb. 15, 1932	1.25 p.m.	6.31
11	4	Feb. 15, 1932	3.08 p.m.	5.23
12	4	Feb. 15, 1932	3.45 p.m.	4.87
3	5	April 8, 1932	8.30 a.m.	3.64
4	5	April 8, 1932	9.38 a.m.	3.20

[a] A diversion was being made between Stations 8 and 9.

PERCOLATION TESTS ON CAMPBELL (SARATOGA) CREEK—Continued

Percolation Losses—

Test No.[a]	Between stations	Channel length, miles	Area flooded, acres	Loss in cubic feet per second		
				C.F.S.	Per mile	Per acre
1	1 and 2	0.2	0.4	0.9	4.5	2.2
2	3 and 6	2.35	2.71	2.20	0.94	0.81
3	3 and 5	1.12	1.95	[b]0.61		
	5 and 6	1.23	2.12	3.48	2.83	1.64
3A	5 and 6	1.23	2.12	3.65	2.96	1.72
4	7 and 8	1.56	3.12	2.41	1.54	0.77
	9 and 10	0.80	1.34	0.33	0.41	0.25
	10 and 11	1.48	2.28	1.08	0.73	0.47
	11 and 12	1.20	1.69	0.36	0.30	0.21
5	3 and 4	0.93	1.13	0.44	0.47	0.39

Maximum total observed rate of percolation, 8.27 cubic feet per second.

The loss between stations where measurements were made on successive days was determined by plotting discharge curves from which the mean for the period of observation was obtained.

The indicated low percolation rates at points above Prospect Road is undoubtedly due to the presence of springs.

[a] Test No. 1 represents four series of measurements taken on successive days.
Test No. 2 represents a single set of measurements.
Test No. 3 represents series of measurements made on three successive days.
Test No. 3A represents series of measurements made on four successive days.
Test No. 4 represents a single set of measurements, with a diversion being made between Stations 8 and 9.
Test No. 5 represents a single set of measurements.

[b] This figure represents accretions.

PERCOLATION TESTS ON SAN TOMAS CREEK

(See also under "Percolation on San Tomas Creek and Tributaries")

Location of Measuring Stations—

STATION No. 1—390 feet from upstream side of bridge on Quito Road ½ mile below intersection of Quito Road with the Saratoga-Los Gatos Road.

STATION No. 2—350 feet downstream from the Peninsular Railroad bridge. Between two Eucalyptus trees on the property of Mr. B. Jolimay and just below the junction of Wildcat Creek with the main channel of the San Tomas Creek.

STATION No. 3—A diversion on the property of Mr. P. Silacci. 2,640 feet downstream from Station No. 2.

STATION No. 4—Point of Complete absorption—January 24, 1932—below San Tomas Avenue and above Smith Creek.

Measurements Made—

Station	Test No.	Date	Time	Discharge in cubic feet per second
1	1	Jan. 24, 1932	12.30 p.m.	2.34
4	1	Jan. 24, 1932	12.30 p.m.	.00
2	2	Feb. 3, 1932	2.30 p.m.	3.68
3	2	Feb. 3, 1932	3.35 p.m.	2.70

Percolation Losses—

Test No.	Between stations	Channel length, miles	Area flooded, acres	Loss in cubic feet per second		
				C.F.S.	Per mile	Per acre
1	1 and 4	2.69	1.93	2.34	0.87	1.21
2	2 and 3	0.50	1.02	0.98	1.96	0.95

Maximum total observed rate of percolation, 2.34 cubic feet per second.

NOTE.—No water in Wildcat Creek and no diversion at Station 3 on January 24, 1932. On February 3, 1932, total flow being diverted at Station 3, and stream stage practically constant throughout the day.

PERCOLATION TESTS ON SMITH CREEK

(See also under "Percolation tests on San Tomas Creek and Tributaries")

Location of Measuring Stations—

STATION No. 1—West fork of Smith Creek at Pollard Road (same as the rated gaging station employed in discharge measurements).

STATION No. 2—East fork of Smith Creek at Pollard Road (same as the rated gaging station employed in discharge measurements).

STATION No. 3—On Smith Creek, 50 feet from downstream side of San Tomas Road bridge; bridge being 75 feet north of Hazel Avenue.

Measurements Made—

Station	Date	Time	Discharge in cubic feet per second
1	Feb. 5, 1932	[a]Mean for day	2.00
2	Feb. 5, 1932	[a]Mean for day	2.80
Waste from Page ditch	Feb. 5, 1932	Est. 200 G.P.M.	0.44
3	Feb. 5, 1932	2.58 p.m.	3.49

[a] These figures are the mean flow of the day for the station as taken from daily record of flow at D.W.R. rated stations.

Percolation Losses—

Between stations	Channel length, miles	Area flooded, acres	Loss in cubic feet per second		
			C.F.S.	Per mile	Per acre
1 + 2 and 3	1.48	1.25	1.75	1.18	1.40

NOTE.—Results of this test approximate only because of irregularity of inflow from Page ditch.

PERCOLATION LOSSES ON SAN TOMAS CREEK AND TRIBUTARIES AS INDICATED BY DAILY RECORD OF FLOW AT D.W.R. RATED STATIONS

(See note below)

Date	Mean daily flow in cubic feet per second							Loss upper to lower gaging stations C.F.S.
	Smith Creek, East Fork	Smith Creek, West Fork	San Tomas Creek at Pollard Road	Wildcat Creek East Fork	Wildcat Creek, West Fork	Combined total all tributaries	San Tomas Creek at Stevens Creek Road	
February 5	2.8	2.0	13.7	7 1	3.7	29.3	9 6	19.7
February 6	14 8	29.0	34 2	30 0	17.1	125.1	89.0	36.1
February 7	3.4	6.0	10.0	4 1	6.3	29.8	24.0	5.8
February 8	13 6	32.0	32.5	34 1	18.3	130 5	122.0	8.5
February 9	4 4	12.0	22.5	9.6	12.7	61.2	49.0	12.2
February 10	1 2	2 8	10.8	1 3	5.6	21.7	17.1	4.6
February 11	.9	1.8	7 3	.8	3 3	14.1	9 6	4.5
February 12	.4	1.3	6 0	.4	2.1	10.2	6.1	4.1
February 13	.2	1.0	4.4	.2	2.3	8.1	3.7	4.4
February 14	.1	.8	3.9	.2	1 9	6.9	3.4	3.5
February 15	.1	.6	2.9	.1	1.6	5.3	2.0	3.3
February 16	.2	.5	2.9	.1	1.4	5.1	1.0	4.1
February 17	.2	.4	2.9	.1	1.2	4.8	0	4.8
February 18	.3	.3	2.8	0	1.5	4.9	0	4.9
February 19	.3	.2	2.8	0	1.7	5.0	2.8	2.2
February 20	.3	.2	2.6	0	1.7	4.8	0	4 8
Total	43.2	90 9	162.2	88 1	82.4	466.8	339.3	127.5
Mean	2.7	5 7	10.1	5 5	5.1	29.2	21.2	8.0
Acre-feet	85 7	180.9	320.5	174.5	161.8	926.7	672.8	253.9

Loss for period 254 acre-feet.

During this period some diversions occurred between stations and there was also some accretion to the streams from local run-off. From February 5th to February 10th the accretions very materially exceeded the diversions and from the tenth to the twentieth of the month there was little or no accretion other than intermittent contributions from Page ditch. The total accretion during the entire period undoubtedly exceeded the diversions, sufficiently so that the absorption indicated above may be regarded as conservative.

PERCOLATION TESTS ON LOS GATOS CREEK

Location of Measuring Stations—

STATION No. 1—300 feet upstream from center of Cypress Avenue Bridge in the town of Los Gatos and on the property of Mr. Chas. Daniels.

STATION No. 2—100 feet upstream from center of Cypress Avenue Bridge.

STATION No. 3—Increment to the flow of Los Gatos Creek at a point 1,350 feet downstream from center of Cypress Avenue Bridge due to overflow from the septic tank of the town of Los Gatos.

STATION No. 4—4,200 feet downstream from center of Cypress Avenue Bridge (near gravel washer).

STATION No. 5—At intersection of Lark Avenue with Los Gatos Creek.

STATION No. 6—300 feet downstream from center line of Lark Ave.

STATION No. 7—3,674 feet downstream from center line of Lark Avenue, or 186 feet upstream from Kirk Dam.

STATION No. 8—In Kirk Ditch, 40 feet below headgates, or 226 feet from Station No. 7.

STATION No. 15—In Los Gatos Creek, 40 feet downstream from lower edge of concrete apron of old dam near Casey Road. Edge of apron is approximately 60 feet downstream from center of Casey Road.

STATION No. 16—In Los Gatos Creek 4,775 feet upstream from center of Campbell Avenue Bridge, Campbell Avenue being the principal east and west road through the town of Campbell.

STATION No. 17—Point of complete absorption, January 8, 1932—about one quarter mile above Campbell Avenue.

STATION No. 18—Point of complete absorption, February 20, 1932—about one quarter mile below Campbell Avenue.

Measurements Made—

Station	Test No.	Date	Time	Discharge in cubic feet per second
15	1	Jan. 8, 1932	9.15 a.m.	5.75
17	1	Jan. 8, 1932	9.15 a.m.	0.00
1	2	Jan. 19, 1932	2.53 p.m.	86.55
7	2	Jan. 19, 1932	4.00 p.m.	81.21
1	3	Jan. 23, 1932	10.05 a.m.	53.56
3	3	Jan. 23, 1932	11.00 a.m.	0.50
4	3	Jan. 23, 1932	1.25 p.m.	54.71
5	3	Jan. 23, 1932	2.48 p.m.	55.81
7	3	Jan. 23, 1932	4.05 p.m.	51.38
1	3	Jan. 24, 1932	9.58 a.m.	50.37
3	3	Jan. 24, 1932	10.35 a.m.	0.50
4	3	Jan. 24, 1932	11.08 a.m.	46.39
5	3	Jan. 24, 1932	1.25 a.m.	49.68
7	3	Jan. 24, 1932	2.33 a.m.	48.80
1	3	Jan. 25, 1932	9.00 a.m.	47.03
3	3	Jan. 25, 1932	9.30 a.m.	0.50
4	3	Jan. 25, 1932	10.00 a.m.	46.08
5	3	Jan. 25, 1932	11.18 a.m.	49.73
7	3	Jan. 25, 1932	1.25 p.m.	43.14
1	3	Jan. 26, 1932	10.02 a.m.	44.58
3	3	Jan. 26, 1932	10.30 a.m.	0.50
4	3	Jan. 26, 1932	11.00 a.m.	43.81
5	3	Jan. 26, 1932	12.00 m.	44.46
7	3	Jan. 26, 1932	1.43 p.m.	41.99
16	4	Feb. 20, 1932	9.50 a.m.	9.58
18	4	Feb. 20, 1932	9.50 a.m.	0.00
2	5	April 27, 1932	8.53 a.m.	9.11
3	5	April 27, 1932	9.30 a.m.	0.75
4	5	April 27, 1932	10.00 a.m.	6.20
3	5	April 27, 1932	2.00 p.m.	1.00
6	5	April 27, 1932	4.43 p.m.	4.49
8	5	April 27, 1932	5.25 p.m.	2.85
2	5	April 28, 1932	8.53 a.m.	9.11
3	5	April 28, 1932	9.30 a.m.	0.75
4	5	April 28, 1932	10.13 a.m.	7.38
6	5	April 28, 1932	12.15 a.m.	4.97
8	5	April 28, 1932	1.35 p.m.	3.19

PERCOLATION TESTS ON LOS GATOS CREEK—Continued

Percolation Losses—

Test No.	Between stations	Channel length, miles	Area flooded, acres	Loss in cubic feet per second		
				C.F.S.	Per mile	Per acre
[a]1	15 and 17	0.76	2.43	5.75	7.57	2.36
[b]2	1 and 7	2.37	13.54	5.34	2.25	0.39
[c]3	1+3 and 4	0.85	4.92	2.21	2.60	0.45
	4 and 5	0.82	4.03	[f]3.11		
	5 and 7	0.70	3.20	3.45	4.93	1.08
[d]4	16 and 18	1.09	3.81	9.58	8.79	2.51
[e]5	2+3 and 4	0.81	2.44	2.99	3.69	1.23
	4 and 6	0.88	2.85	2.21	2.51	0.77
	6 and 8	0.68	1.88	1.75	2.57	0.93

Maximum total rate of percolation observed, 15.24 cubic feet per second.

[a] A single measurement at Station 15, Station 17 being point of complete absorption. Conditions good—results should be accurate.

[b] A single set of measurements. No contribution at Station 3. Small rate of absorption probably due to bank seepage and springs.

[c] A series of measurements taken on four successive days; the loss between stations was determined by plotting discharge curves from which the mean for the period of observation was obtained. Increment at Station 3 fairly constant and estimated at 0.50 c.f.s. This extensive test was made because of conditions prevailing during Test 2, for the purpose of isolating that portion of the channel in which the more or less invisible accretions occur.

[d] A single measurement at Station 16, Station 18 being point of complete absorption. Station 17 of Test 1 being about one half mile downstream from Station 16. There is an overlap in Tests 1 and 4.

[e] A series of measurements taken on two successive days, the loss between stations being determined by plotting discharge curves from which the mean for the period of observation was obtained. This test was undertaken late in the season to avoid or minimize the effect of invisible accretions present during Tests 2 and 3.

[f] This figure represents accretions.

PERCOLATION TESTS ON GUADALUPE RIVER

Location of Measuring Stations—

STATION No. 1—0.6 mile upstream from Almaden Road Bridge, near Coleman Avenue.

STATION No. 2—1.0 mile upstream from Alamden Road Bridge, near Coleman Avenue.

STATION No. 3—100 feet upstream from Almaden Road Bridge.

STATION No. 10—100 feet from upstream side of Coleman Avenue Bridge across Guadalupe River approximately two and one quarter miles above junction with Alamitos Creek.

STATION No. 11—708 feet upstream from downstream side of railroad bridge crossing Guadalupe River approximately 1.6 miles above junction with Alamitos Creek.

STATION No. 12—20 feet from downstream side of railroad bridge referred to in description of Station No. 11.

STATION No. 13—In the Masson Ditch, 20 feet downstream from the headgates. Headgates are on north bank of Guadalupe River, 75 feet from downstream side of railroad bridge referred to in description of Station No. 11.

STATION No. 14—1,972 feet from downstream side of railroad bridge referred to in description of Station No. 11.

STATION No. 16—Immediately below the junction of Alamitos Creek and Guadalupe River.

STATION No. 17—240 feet upstream from center of Downer Avenue Bridge across Guadalupe River.

STATION No. 18—2,076 feet downstream from center of Downer Avenue Bridge.

STATION No. 19—3,688 feet downstream from center of Downer Avenue Bridge.

STATION No. 20—5,506 feet downstream from center of Downer Avenue Bridge.

STATION No. 21—545 feet upstream from center line of Branham Lane (no bridge at Branham Lane).

STATION No. 22—This station is a pump diverting water from Guadalupe River at a point 900 feet downstream from center line of Branham Lane.

STATION No. 23—4,805 feet downstream from center line of Branham Lane.

STATION No. 24—Point of complete absorption January 29, 1932—just above Branham Lane.

STATION No. 25—Point of complete absorption February 20, 1932—about one-half mile below Hillsdale Avenue.

STATION No. 26—Point of complete absorption February 21, 1932—2,800 feet below Branham Lane.

STATION No. 27—Point of complete absorption March 11-12, 1932—3,487 feet downstream from railroad bridge referred to in description of Station No. 11.

Measurements Made—

Station	Test No.	Date	Time	Discharge in cubic feet per second
2	1	Jan. 18, 1930	11.15 a.m.	11.9
1	1	Jan. 18, 1930	1.30 p.m.	9.6
3	1	Jan. 18, 1932	3.45 p.m.	4.6
2	1	Jan. 19, 1930	10.25 a.m.	5.7
1	1	Jan. 19, 1930	11.55 a.m.	4.1
3	1	Jan. 19, 1930	12.35 p.m.	1.1
1	1	Jan. 20, 1930	9.10 a.m.	2.9
2	1	Jan. 20, 1930	9.55 a.m.	5.0
14	3	Dec. 30, 1931	11.35 a.m.	57.59
11	3	Dec. 30, 1931	1,58 p.m.	57.40
13	3	Dec. 30, 1931	3.00 p.m.	1.66
11	5	Jan. 19, 1932	9.38 a.m.	27.75
14	5	Jan. 19, 1932	10.40 a.m.	20.53
13	5	Jan. 19, 1932	11.53 a.m.	5.39
17	6	Jan. 29, 1932	1.30 p.m.	15.11
16	6	Jan. 29, 1932	2.20 p.m.	19.65
18	6	Jan. 29, 1932	2.25 p.m.	10.35
19	6	Jan. 29, 1932	3.33 p.m.	7.41
17	6	Jan. 29, 1932	3.38 p.m.	15.06
20	6	Jan. 29, 1932	4.35 p.m.	3.15
24	6	Jan. 29, 1932	5.00 p.m.	0.00
21	7	Feb. 20, 1932	1.53 p.m.	18.94
23	7	Feb. 20, 1932	2.33 p.m.	0.99
25	7	Feb. 20, 1932	3.00 p.m.	0.00
22	7	Feb. 20, 1932	3.15 p.m.	0.5 est.
21	7	Feb. 21, 1932	10.45 a.m.	14.75
26	7	Feb. 21, 1932	11.30 a.m.	0.00
22	7	Feb. 21, 1932	11.30 a.m.	0.5 est.
10	9	Mar. 11, 1932	3.10 p.m.	7.69
12	9	Mar. 11, 1932	3.58 p.m.	5.67
27	9	Mar. 11, 1932	5.00 p.m.	0.00
13	9	Mar. 11, 1932	4.28 p.m.	3.49
10	9	Mar. 12, 1932	11.48 a.m.	7.55
12	9	Mar. 12, 1932	12.58 p.m.	5.41
27	9	Mar. 12, 1932	2.00 p.m.	0 00
13	9	Mar. 12, 1932	1.25 p.m.	3.42

PERCOLATION TESTS ON GUADALUPE RIVER—Continued

Percolation Losses—

Test No.[a]	Between stations	Channel length, miles	Area flooded, acres	Loss in cubic feet per second		
				C.F.S.	Per mile	Per acre
1	2 and 1	0.4	1.5	1.7	4.2	1.1
	1 and 3	0.6	2.2 est.	3.7	6.2	1.68
3	11 and 14	0.51	2.49	[b]1.85		
5	11 and 14	0.51	2.27	1.83	3.59	0.81
6	16 and 17	0.45	2.07	4.59	10.20	2.22
	17 and 18	0.44	1.80	4.76	10.82	2.64
	18 and 19	0.31	2.23	2.94	9.48	1.32
	19 and 20	0.34	1.66	4.26	12.53	2.56
	20 and 24	0.08	0.26	3.15	39.37	12.10
7	21 and 23	1.01	3.83	17.45	17.28	4.56
	23 and 25	0.66	0.94	0.99	1.50	1.05
	21 and 26	0.63	2.48	14.25	22.62	5.75
9	10 and 12	0.72	1.78	2.05	2.85	1.15
	12 and 27	0.66	1.59	2.17	3.23	1.34

Maximum total rate of percolation observed, 38.37 cubic feet per second.

[a] Test 1 represents series of measurements taken on three successive days. The loss between stations was determined by plotting discharge curves from which the mean for the period of observation was obtained.

Tests 3 and 5 represent single sets of measurements. The diversion to the Masson Ditch (Station 13) is considered.

Test 6 represents a single set of measurements. Conditions were excellent and the results should be reliable. Some two acres of the area between Stations 18 and 19 consists of a gravel pit in which silting has occurred, probably accounting for the small observed loss in this section; station 24 represents the point of complete absorption.

Test 7 represents single sets of measurements. Station 25 represents the point of complete absorption February 20. The loss indicated between Stations 23 and 25 is doubtful due to the rapidity of recession of the stream, and is probably too small. The distance downstream from Station 20 (Test 6) to Station 21 (Test 7) is 155 feet; Station 24 (Test 6)) is 100 feet downstream from Station 20 (Test 6) hence Tests 6 and 7 overlap 215 feet. Within this 245 feet section there is an exceedingly porous spot where the loss is apparent to the eye. Test 6 includes only 0.26 acres of this porous spot while Test 7, Stations 21 to 25, includes 3.83 acres and Station 21 to 26 includes 2.48 acres. The diversion at Station 22 is considered.

Test 9 represents a series of measurements made on two successive days; the loss between Stations was determined by plotting discharge curves from which the mean for the period of observation was obtained. The diversion to the Masson Ditch (Station 13) is considered.

[b] This figure represents accretions.

PERCOLATION TESTS ON ALAMITOS CREEK

Location of Measuring Stations—

STATION No. 3—100 feet upstream from Almaden Road bridge on Guadalupe River.

STATION No. 4—150 feet upstream from downstream side of railroad bridge crossing Alamitos Creek approximately one mile below McKeen Road and two miles above Redmond Avenue.

STATION No. 5—12 feet downstream from suspension footbridge on property of C. Pfeiffer, or 3,200 feet from downstream side of railroad bridge referred to in description of Station No. 4.

STATION No. 6—Downstream side of wooden bridge leading to stone quarry, 5,067 feet from downstream side of railroad bridge referred to above.

STATION No. 7—657 feet downstream from Station No. 6.

STATION No. 8—1,057 feet from downstream side of stone quarry bridge referred to in description of Station No. 6.

STATION No. 9—40 feet upstream from U. S. G. S. gaging station on Alamitos Creek.

STATION No. 16—Immediately below the junction of Alamitos Creek and Guadalupe River.

Measurements Made—

Station	Test No.	Date	Time	Discharge in cubic feet per second
7	2	Dec. 26, 1931	11.35 a.m.	50.18
5	2	Dec. 26, 1931	3.13 p.m.	48.06
4	4	Jan. 18, 1932	9.45 a.m.	49.72
6	4	Jan. 18, 1932	10.53 a.m.	47.98
5	4	Jan. 18, 1932	3.40 p.m.	49.31
3	6	Jan. 29, 1932	11.50 a.m.	1.76
9	6	Jan. 29, 1932	12.50 p.m.	23.08
16	6	Jan. 29, 1932	2.20 p.m.	19.65
8	8	Mar. 11, 1932	11.10 a.m.	15.06
9	8	Mar. 11, 1932	1.48 p.m.	14.98
8	8	Mar. 12, 1932	9.23 a.m.	14.71
9	8	Mar. 12, 1932	10.45 a.m.	14.94

Percolation Losses—

Test No.[a]	Between stations	Channel length, miles	Area flooded, acres	Loss in cubic feet per second		
				C.F.S.	Per mile	Per acre
2	5 and 7	0.48	2.20	[b]2.12	----------	----------
4	4 and 5	0.63	2.40	0.41	0.65	0.17
	5 and 6	0.35	1.32	1.33	3.80	1.01
6	9 + 3 and 16	0.56	4.53	5.19	9.27	1.14
8	8 and 9	1.67	6.15	[b]0.09	----------	----------

Maximum total rate of percolation observed, 6.93 cubic feet per second.

[a] Test 2 represents a single set of measurements. During the forenoon a drop in stage of 0.1 foot occurred and during the afternoon no change was detected; considerable bank seepage was observed. The result indicates an accretion.

Test 4 represents a single set of measurements.

Test 6 represents a single set of measurements. There was no change in stage throughout the test. Conditions were excellent and the results should be reliable.

Test 8 represents a series of measurements made on two successive days; the accretion between stations was determined by plotting discharge curves from which the mean for the period was obtained. There appears to be an impervious stratum underlying the Alamitos Creek in this section said to be due to the working of the Almaden mines in early days.

[b] These figures represent accretions.

PERCOLATION TESTS ON COYOTE RIVER (MADRONE TO COYOTE)

Location of Measuring Stations—

STATION No. 4—At cable near U. S. G. S. gaging station at Madrone; i. e., 460 feet upstream from Cochran Road bridge. Stages were read on staff near cable.

STATION No. 5—8,955 feet downstream from Station 4, or approximately 0.4 miles upstream from intersection of Burnett School road prolonged with stream bed.

STATION No. 6—At the intersection of the stream bed with a line parallel to Kirby Avenue and meeting the Monterey Highway at a point 1,710 feet northwesterly from Kirby Avenue.

STATION No. 7—At the intersection of the stream bed with a line making right angles with the Monterey Highway and meeting the highway at a point 3,170 feet southeasterly from Palm Avenue.

STATION No. 8—At the intersection of the stream bed with a line making right angles with the Monterey Highway and meeting the highway at a point 2,110 feet northwesterly from Palm Avenue.

STATION No. 9—At the intersection of the stream bed with a line making right angles with the Monterey Highway and meeting the highway at a point 7,920 feet northwesterly from Palm Avenue.

STATION No. 10—At the intersection of the stream bed with a line making right angles with the Monterey Highway and meeting the highway at a point 12,670 feet (2.4 miles) northwesterly from Palm Avenue.

STATION No. 11—At the intersection of the stream bed with a line making right angles with the Monterey Highway and meeting the highway at a point 1,850 feet southeasterly from intersection with Metcalf Road.

STATION No. 12—At the intersection of the stream bed with a line making right angles with the Monterey Highway and meeting the highway at a point 1,850 feet northwesterly from intersection with Metcalf Road.

STATION No. 13—At Metcalf Road bridge.

STATION No. 14—Point of complete absorption—March 22, 1932, one-half mile below Metcalf Road.

Measurements Made—

Station	Test No.	Date	Time	Discharge in cubic feet per second
9	[a]2	Feb. 23, 1932	10.30 a.m.	43 74
10	2	Feb. 23, 1932	12.20 p.m.	48 99
4	2	Feb. 23, 1932	1.55 p.m.	80 75
11	[b]2	Feb. 23, 1932	2.40 p.m.	40.48
5	2	Feb. 23, 1932	3.55 p.m.	75 47
12	[b]2	Feb. 23, 1932	4.10 p.m.	40.71
8	[a]2	Feb. 23, 1932	5.40 p.m.	54 07
7	2	Feb. 23, 1932	5.45 p.m.	64.28
8	[a]2	Feb. 24, 1932	9.05 a.m.	51 68
4	2	Feb. 24, 1932	9.10 a.m.	76.04
9	[a]2	Feb. 24, 1932	10.40 a.m.	38.74
5	2	Feb. 24, 1932	11.00 a.m.	68 69
10	2	Feb. 24, 1932	11.50 a.m.	41 60
6	2	Feb. 24, 1932	1.30 p.m.	68.99
11	[b]2	Feb. 24, 1932	1.55 p.m.	36 31
7	2	Feb. 24, 1932	2.55 p.m.	59 52
12	[b]2	Feb. 24, 1932	3.20 p.m.	34.12
8	2	Feb. 25, 1932	8.55 a.m.	47.77
4	2	Feb. 25, 1932	9.15 a.m.	69.72
9	2	Feb. 25, 1932	10.30 a.m.	32 68
5	2	Feb. 25, 1932	10.50 a.m.	62 74
10	2	Feb. 25, 1932	11.45 a.m.	36.47
6	2	Feb. 25, 1932	1.00 p.m.	63 11
11	2	Feb. 25, 1932	2.00 p.m.	31 92
7	2	Feb. 25, 1932	2.30 p.m.	53.34
12	2	Feb. 25, 1932	3.25 p.m.	30 69
13	3	Mar. 22, 1932	----------	4 0
14	3	Mar. 22, 1932	----------	0 0

[a] Tributary "A" between Stations 8 and 9 was contributing 0.5 C.F.S. at 5.40 p.m. on February 23, 1932 and nothing at 9.05 a.m. February 24, 1932.

[b] Tributary "B" between Stations 11 and 12 was contributing 2.49 C.F.S. at 4.45 p.m. on February 23, 1932 and 2.09 C.F.S. at 4.23 p.m. on February 24, 1932.

PERCOLATION TESTS ON COYOTE RIVER (MADRONE TO COYOTE)—Continued

Percolation Losses—

Test No.[a]	Between stations	Channel length, miles	Area flooded, acres	Loss in cubic feet per second		
				C.F.S.	Per mile	Per acre
2	4 and 5	1.69	10.32	6.22	3.68	0.60
	5 and 7	3.35	27.57	8.54	2.55	0.31
	7 and 8	1.05	9.67	8.79	8.37	0.91
	8+A and 9	1.49	12.47	13.10	8.79	1.05
	9 and 10	1.27	8.38	[b]3.59		
	10 and 11	1.26	6.81	5.08	4.03	0.75
	11+B and 12	0.80	5.92	3.62	4.52	0.61
	5 and 6	1.37	10.56	[b]1.18		
	6 and 7	1.98	17.01	9.17	4.63	0.51
3	13 and 14	.50	1.62	4.00	8.00	2.47

Maximum total observed, Madrone to Station 14, 45.35 cubic feet per second.

[a] Test 2 represents a series of measurements on successive days, over a 44 hour period except between stations 5 and 6 and 6 and 7 where the test extended over a 24-hour period. The loss between stations was determined by plotting the discharge curves from which the mean for the period of observation was obtained.

Test 3 represents a single measurement.

[b] These figures represent accretions.

Dimensions of Percolation Beds—

Between stations	During tests			Highest stages of 1932	
	Average width in feet	Length in feet	Area in acres	Average width in feet	Area in acres
4 and 5	50.2	8,955	10.32	185	38
5 and 6	63.5	7,245	10.56	225	37
6 and 7	71.0	10,435	17.01	515	123
7 and 8	75.7	5,565	9.67	485	62
8 and 9	69.0	7,875	12.47	615	111
9 and 10	54.5	6,700	8.38	445	68
10 and 11	44.5	6,665	6.81	580	89
11 and 12	61.0	4,225	5.92	750	73
4 and 12	61.3	57,665	81.14	455	601

PERCOLATION TESTS ON COYOTE RIVER (COYOTE TO SAN JOSE)

Location of Measuring Stations—

STATION No. 1—At Story Road. Wading station.

STATION No. 2—At Tully Road. Suspension and wading.

STATION No. 3—At Ford Road. Suspension and wading.

STATION No. 13—At Metcalf Road. Suspension measurements made from bridge; wading measurements made about 500 feet downstream, near weir at intake of Heinlen Ditch.

STATION No. 15—Wading station on Heinlen Ranch, 5,794 feet downstream from Station No. 13, and about 200 yards upstream from the Heinlen residence.

STATION No. 16—At Tennant Avenue. Wading station.

U. S. G. S. Gaging Station at Edenvale at "The Narrows." Stages for this station are read on inclined-staff gage near residence of J. H. Swickard. The gage is 1,145 feet downstream from the cable station.

STATION No. 17—At Hellyer Road. Suspension and wading.

STATION No. 18—At Singleton Road. Wading station.

STATION No. 19—At East Santa Clara Street, San Jose.

Measurements Made—

Station	Test No.	Date	Time	Discharge in cubic feet per second
U. S. G. S. at Edenvale	1	Mar. 7, 1930	12.40 p.m.	350.0
3	1	Mar. 7, 1930	2.30 p.m.	330.4
2	1	Mar. 7, 1930	4.30 p.m.	263.1
1	1	Mar. 7, 1930	5.50 p.m.	238.6
1	1	Mar. 8, 1930	9.30 a.m.	128.1
U. S. G. S. at Edenvale	1	Mar. 8, 1930	11.00 a.m.	146.0
2	1	Mar. 8, 1930	11.35 a.m.	122.0
3	1	Mar. 8, 1930	1.00 p.m.	150.0
3	1	Mar. 8, 1930	2.45 p.m.	137.2
2	1	Mar. 8, 1930	4.10 p.m.	99.1
1	1	Mar. 8, 1930	5.30 p.m.	85.5
U. S. G. S. at Edenvale	2	Feb. 23, 1932	Mean daily discharge	12.0
U. S. G. S. at Edenvale	2	Feb. 24, 1932	Mean daily discharge	7.0
U. S. G. S. at Edenvale	2	Feb. 25, 1932	Mean daily discharge	3.8
13	3	Jan. 25, 1933	11.55 a.m.	295.37
		Jan. 25, 1933	4.20 p.m.	217.11
	3	Jan. 26, 1933	1.55 p.m.	75.89
		Jan. 26, 1933	5.00 p.m.	60.68
	3	Jan. 27, 1933	10.30 a.m.	9.97
	4	Jan. 28, 1933	10.30 a.m.	146.79
		Jan. 28, 1933	3.45 p.m.	114.73
	4	Jan. 29, 1933	4.20 p.m.	1587.6
	4	Jan. 30, 1933	9.50 a.m.	353.87
15	3	Jan. 25, 1933	12.10 p.m.	261.08
		Jan. 25, 1933	4.30 p.m.	196.90
	3	Jan. 26, 1933	12.15 p.m.	61.68
		Jan. 26, 1933	4.15 p.m.	44.21
	3	Jan. 27, 1933	9.40 a.m.	0.33
	4	Jan. 28, 1933	9.30 a.m.	138.83
		Jan. 28, 1933	1.20 p.m.	122.27
	4	Jan. 31, 1933	9.20 a.m.	69.81
	4	Feb. 1, 1933	9.20 a.m.	[a]5.0
16	3	Jan. 25, 1933	2.40 p.m.	196.10
	3	Jan. 26, 1933	11.20 a.m.	52.98
		Jan. 26, 1933	3.30 p.m.	34.21
	4	Jan. 28, 1933	10.15 a.m.	131.57
		Jan. 28, 1933	2.45 p.m.	93.65
	4	Jan. 31, 1933	10.30 a.m.	53.91
	4	Feb. 1, 1933	9.10 a.m.	[a]1.5
3	3	Jan. 25, 1933	4.15 p.m.	146.78
	3	Jan. 26, 1933	9.40 a.m.	47.23
		Jan. 26, 1933	2.45 p.m.	20.53
	4	Jan. 28, 1933	12.30 p.m.	83.58
		Jan. 28, 1933	4.00 p.m.	70.10
	4	Jan. 29, 1933	5.50 p.m.	1430.0
	4	Jan. 30, 1933	11.20 a.m.	258.8
	4	Jan. 31, 1933	12.15 p.m.	39.41
	4	Feb. 1, 1933	8.35 a.m.	[a]0.5
U. S. G. S. at Edenvale	4	Jan. 28, 1933	2.30 p.m.	80.52
	4	Jan. 31, 1933	2.20 p.m.	34.66
	4	Feb. 1, 1933	9.00 a.m.	[a]1.0

PERCOLATION TESTS ON COYOTE RIVER (COYOTE TO SAN JOSE)—Continued

Measurements Made—Continued

Station	Test No.	Date	Time	Discharge in cubic feet per second
17	3	Jan. 26, 1933	3.30 p.m.	22.99
	4	Jan. 28, 1933	3.10 p.m.	66 89
	4	Jan. 29, 1933	8.00 p.m.	1329.2
	4	Jan. 30, 1933	2.50 p.m.	217.5
	4	Jan. 31, 1933	11.15 a.m.	31.54
	4	Feb. 1, 1933	8.15 a.m.	[a]8 0
18	3	Jan. 26, 1933	1.20 p.m.	25.75
	4	Jan. 29, 1933	10.20 a.m.	31.68
2	3	Jan. 26, 1933	12.05 p.m.	38.95
	4	Jan. 29, 1933	10.45 a.m.	28.39
	4	Jan. 30, 1933	9.40 a.m.	353.46
	4	Jan. 31, 1933	8.35 a.m.	61.50
	4	Feb. 1, 1933	10.00 a.m.	[a]2.0
1	3	Jan. 26, 1933	2.05 p.m.	35.91
	4	Jan. 29, 1933	12.00 m.	21.28
	4	Jan. 30, 1933	3.50 p.m.	240.94
	4	Jan. 31, 1933	9.45 a.m.	55.00
	4	Feb. 1, 1933	8.30 a.m.	[a]1.5
19	3	Jan. 26, 1933	9.50 a.m.	43.44
		Jan. 26, 1933	4.25 p.m.	28.03
	4	Jan. 29, 1933	11.45 a.m.	24.09
		Jan. 29, 1933	1.30 p.m.	22.64
		Jan. 29, 1933	10.15 p.m.	1186.13
	4	Jan. 30, 1933	11.40 a.m.	359.18
		Jan. 30, 1933	2.15 p.m.	290.80
	4	Jan. 31, 1933	10.50 a.m.	49 61
		Jan. 31, 1933	11.40 a.m.	48.57
	4	Feb. 1, 1933	8.15 a.m.	[a]1.25

[a] Estimated.

Percolation Losses—

Test No.[a]	Between stations	Channel length, miles	Area flooded, acres	Loss in cubic feet per second		
				C.F.S.	Per mile	Per acre
1	3 and U.S.G.S.	1.0	----------	28.0	28.0	----------
	U.S.G.S. and 2	4 8	----------	18.0	3 8	----------
	2 and 1	2.3	----------	9.0	3.9	----------
2	12 and U.S.G.S.	4.9	----------	28.2	5 8	----------
3	13 and 15	1.1	7 08	24.3	22.1	3.43
3	15 and 16	1.2	8.20	13.3	11.1	1.62
3	16 and 3	1 7	6 10	14 6	8 6	2.39
3	3 and U.S.G.S.	1.0	2 32	10.0	10 0	1.31
3	U.S.G.S. and 17	1 8	4 88	15.0	8.3	3 07
3	17 and 18	1.2	1 75	[b]1.0	----------	----------
3	18 and 2	1 8	3 19	3.4	1.9	1 06
3	2 and 1	2.3	2 83	1.9	0.8	0 67
3	1 and 19	1 8	1 44	0 5	0.3	0 34
3	13 and 19	13.9	37 79	83.0	6.0	2 20
4	13 and 15	1 1	10 92	28.3	25 7	2.59
4	15 and 16	1 2	12 43	13.9	11.6	1 12
4	16 and 3	1 7	11 05	7 9	4 6	0 71
4	3 and U.S.G.S.	1 0	4 09	9 1	9 1	2 22
4	U.S.G.S. and 17	1 8	12 16	[b]1.5	----------	----------
4	17 and 2	3.0	14 86	7 7	2 6	0.52
4	2 and 1	2.3	8 41	3 1	1.3	0.37
4	1 and 19	1 8	4 56	2 4	1.3	0.52
4	13 and 19	13 9	78 48	72 4	5.2	0 92

Maximum total rate of percolation observed, Station 13 to Station 19 at East Santa Clara Street, San Jose, 108.10 cubic feet per second.

[a] Tests 1 and 2 are a series of measurements on successive days. Test 1 over a 22.5 hour period, and Test 2 over a 44 hour period. The loss between stations was determined by plotting the discharge curves from which the mean for the periods of observation was obtained.

Test 3 is an observation of the entire flow occurring on January 25, 26 and 27, 1933.

Test 4 is an observation of the entire flow occurring on January 28, 29, 30, 31, February 1 and 2, 1933.

[b] These figures represent accretions.

PERCOLATION TESTS ON DRY CREEK

Location of Measuring Stations—

Station No. 1—At wooden bridge one mile by road south of town of Evergreen.

Station No. 2—At Cadwallader Avenue Bridge.

Station No. 3—674 feet upstream from Tully Road.

Station No. 4—2,100 feet upstream from Tully Road.

Diversion No. 4A—300 feet downstream from Station No. 4.

Station No. 5—Point of complete absorption at 4.00 p.m. on February 12, 1932—at Tully Road.

Measurements Made—

Station	Test No.	Date	Time	Discharge in cubic feet per second
1	1	Feb. 12, 1932	2.53 p.m.	2.67
2	1 and 2	Feb. 12, 1932	3.18 p.m.	1.80
3	2 and 4	Feb. 12, 1932	3.58 p.m.	0.05
5	4	Feb. 12, 1932	4.00 p.m.	0.0
4A	2	Feb. 12, 1932	4.15 p.m.	0.80 est.
4A		Feb. 13, 1932	3.15 p.m.	0.50 est.
1	1	Feb. 14, 1932	10.30 a.m.	1.43
2	1 and 3	Feb. 14, 1932	11.03 a.m.	0.70
4	3	Feb. 14, 1932	11.35 a.m.	0.06

Percolation Losses—

Test No.[a]	Between stations	Channel length, miles	Area flooded, acres	Loss in cubic feet per second		
				C.F.S.	Per mile	Per acre
1	1 and 2	1.21	0 51	0.79	0.65	1.55
2	2 and 3	1.44	0.90	[b]0.95	0.66	1.06
3	2 and 4	1 17	0.74	[b]0.64	0.55	0.86
4	3 and 5	0 13	0 05	[b]0.05	0.38	1.00

Maximum total rate of percolation observed, 2.43 cubic feet per second.

[a] Test No. 1 represents series of measurements made over three successive days; the loss between stations was determined by plotting discharge curves from which the mean for the period of observation was obtained.

Tests Nos. 2, 3 and 4 are single sets of measurements.

[b] Absorption rates for those portions of the channel below Station 2 are open to doubt owing to the smallness of the stream, its rapid recession and the fact that the diversion was estimated.

The loss between Stations 2 and 3 takes into consideration the diversion at 4A of 0.80 cubic foot per second.

PERCOLATION TESTS ON PENITENCIA CREEK

Location of Measuring Stations—

STATION No. 1—Downstream side of Capitol Avenue Bridge.

STATION No. 2—550 feet upstream from end of White Road.

STATION No. 3—Measurement in ditch at concrete dam, 300 feet upstream from Noble Avenue Bridge.

STATION No. 4—40 feet upstream from second Peninsular Railway bridge above Toyon Avenue.

STATION No. 5—1,320 feet upstream from Noble Avenue Bridge.

STATION No. 6—150 feet upstream from Piedmont Road Bridge.

STATION No. 7—385 feet downstream from Penitencia Road Bridge.

STATION No. 8—In concrete lined diversion ditch, near intake. Dam supplying ditch is 954 feet downstream from Penitencia Road Bridge.

STATION No. 9—2,215 feet upstream from Noble Avenue Bridge.

STATION No. 10—Point of complete absorption—January 9, 1932. About opposite White Road.

STATION No. 11—Waste at dam.

STATION No. 12—Point of complete absorption—January 27, 1932. About 0.1 of mile below Capitol Avenue.

Measurements Made—

Station	Test No.	Date	Time	Discharge in cubic feet per second
2	1	Jan. 9, 1932	1.15 p.m.	0.08
10	1	Jan. 9, 1932	1.15 p.m.	0
3	1	Jan. 9, 1932	1.58 p.m.	2.05
4	1	Jan. 9, 1932	3.05 p.m.	4.01
9	2	Jan. 18, 1932	12.48 p.m.	41.63
3	2	Jan. 18, 1932	1.20 p.m.	1.91
8	2	Jan. 18, 1932	1.50 p.m.	5.62
1	2	Jan. 18, 1932	2.15 p.m.	29.11
4	3	Jan. 27, 1932	12.25 p.m.	6.41
5	3	Jan. 27, 1932	1.35 p.m.	6.31
6	3	Jan. 27, 1932	2.45 p.m.	5.18
7	3	Jan. 27, 1932	3.33 p.m.	3.98
8	3	Jan. 27, 1932	4.13 p.m.	3.16
11	3	Jan. 27, 1932	4.13 p.m.	0.50 est.
4	3	Jan. 28, 1932	10.10 a.m.	4.80
5	3	Jan. 28, 1932	11.00 a.m.	4.63
6	3	Jan. 28, 1932	11.48 a.m.	3.17
7	3	Jan. 28, 1932	1.43 p.m.	2.17
8	3	Jan. 28, 1932	2.23 p.m.	1.73
11	3	Jan. 28, 1932	2.23 p.m.	0.0

Percolation Losses—

Test No.[a]	Between stations	Channel length, miles	Area flooded, acres	Loss in cubic feet per second		
				C.F.S.	Per mile	Per acre
1	4 and 3 + 2	1.51	2.11	1.88	1.24	0.89
	2 and 10	0.08	0.10	0.08	1.00	0.08
2	9 and 3 + 8 + 1	1.88	3.31	4.99	2.65	1.51
3	4 and 5	0.60	1.08	0.07	0.01	0.06
	5 and 6	0.74	1.14	1.22	1.65	1.07
	6 and 7	0.49	0.80	1.01	2.06	1.26
	7 and 8	0.11	0.24	0.47	4.27	1.96
	11 and 12	0.37	0.25	0.50	1.35	2.00

Maximum total rate of percolation observed, 4.99 cubic feet per second.

[a] Test No. 1 represents a single set of measurements.

Test No. 2 represents a single set of measurements.

Test No. 3 represents a series of measurements made on two successive days; the loss between stations was determined by plotting discharge curves from which the mean for the period of observation was obtained. The water wasting over the dam (Station 11), estimated as 0.50 cubic foot per second on January 27th and found to be zero January 28th, is assumed to have diminished at a rate comparable to that of Stations 7 and 8.

PERCOLATION TESTS ON BERRYESSA CREEK

Location of Measuring Stations—

STATION No. 1—100 feet upstream from Piedmont Road.

STATION No. 2—1,065 feet upstream from Morrill Road.

STATION No. 3—Downstream side of Capitol Avenue Bridge, about 200 feet upstream from Oakland Highway.

Measurements Made—

Station	Date	Time	Discharge in cubic feet per second
1	Feb. 13, 1932	11.50 a.m.	2.22
2	Feb. 13, 1932	1.53 p.m.	1.23
3	Feb. 13, 1932	2.38 p.m.	0.97
1	Feb. 14, 1932	2.45 p.m.	1.50
2	Feb. 14, 1932	3.08 p.m.	0.65
3	Feb. 14, 1932	3.35 p.m.	0.20

Percolation Losses—

Between stations	Channel length, miles	Area flooded, acres	Loss in cubic feet per second		
			C.F.S.	Per mile	Per acre
1 and 2	1.17	0.63	0.86	0.73	1.36
2 and 3	2.11	1.39	0.34	0.16	0.25

Maximum total rate of percolation observed; 1.20 cubic feet per second.

[a] A series of measurements made on two successive days. The loss between stations was determined by plotting discharge curves from which the mean for the period of observation was obtained.

PERCOLATION TESTS ON PAGE DITCH

Location of Measuring Stations—

STATION No. 1—(30 feet below headgates) is located on west bank of Los Gatos Creek about 1.75 miles south of Campbell.

STATION No. 2—Near lower end of ditch on east side of San Tomas Road and 30 feet north of right angle turn in ditch.

Measurements Made—

Station	Test No.	Date	Time	Discharge in cubic feet per second
1	1	Feb. 22, 1930	4.30 p.m.	65.00
1	2	Jan. 21, 1932	10.30 a.m.	29.44
2	2	Jan. 21, 1932	8.45 a.m.	8.41

Test No. 1. Headgate had been open for about 30 hours at the time of making the measurement and the water had progressed about 1.5 miles down the ditch at that time, indicating a high rate of percolation.

Test No. 2. Station 1 to Station 2

Distance ..... 1.60 miles[a]
Average area subject to percolation ..... 3.59 acres[a]
Loss ..... 21.03 cubic feet per second
Average loss per acre ..... 5.86 cubic feet per second

[a] Page Ditch, between Stations 1 and 2, floods 2.94 acres. The triangular pond purchased by the Santa Clara Valley Water Conservation District to be used for percolation purposes and directly connected with the ditch floods 0.65 acres. Total absorption area, 3.59 acres.

NOTE—The variable discharge at the intake of this ditch, together with the numerous small irrigation diversions rendered tests difficult. Conditions during Test 2 were as nearly steady as at any time during the season.

PERCOLATION TESTS ON MASSON DITCH

Location of Measuring Stations—

STATION No. 13—20 feet from headgates on north bank of Guadalupe River; 75 feet downstream from railroad bridge; about 1.6 miles above confluence of Alamitos Creek.

STATION No. 1—3,060 feet measured along the ditch from the headgates and just below junction with branch ditch.

STATION No. 2—In branch ditch 321 feet from junction with main ditch near Station No. 1.

STATION No. 3—Point of complete absorption in branch ditch below Station No. 2. An irregular area immediately below Station No. 2.

STATION No. 4—Point of complete absorption in main ditch 600 feet below Station No. 1.

Measurements Made—

Station	Date	Time	Discharge in cubic feet per second
13	Jan. 9, 1932	8.50 a.m.	2.84
1	Jan. 9, 1932	10.00 a.m.	0.22 est.
2	Jan. 9, 1932	10.00 a.m.	1.16
3	Jan. 9, 1932	10.00 a.m.	0
4	Jan. 9, 1932	10.00 a.m.	0

Percolation Losses—

Between stations	Area flooded, acres	Loss in cubic feet per second	
		C.F.S.	Per acre
13 and 1 and 2	0.59	1.46	2.48
2 and 3	0.29	1.16	4.00
1 and 4	0.03	0.22	6.47

Maximum total rate of percolation observed, 2.84 cubic feet per second.

NOTE—In an unpublished report of field work done by R. L. Egenhoff in connection with O. E. S. Bulletin 254 of the U. S. Department of Agriculture, it is indicated that this ditch diverted up to 13 second feet in 1912 and that 11 second feet failed after 12 hours diversion to appear at a point 2 miles down the ditch. Mr Egenhoff estimated that 50 per cent of the diversions to the Masson Ranch properties was lost by percolation from the ditch and that 75 per cent of the diversions to properties below the Masson Ranch were lost by seepage from the main ditch and laterals.

PERCOLATION TESTS ON DUNCAN DITCH AND FINNEMORE'S SINK HOLE NO. 2

Duncan Ditch—

No percolation measurements were made on Duncan Ditch itself but it is a feeder of Finnemore's Sink Hole No. 2 which can be used as a spreading ground.

The measured discharge into this sink hole on December 30, 1931 was 18.97 second feet and the estimated capacity of the ditch itself is 30 second feet.

Finnemore's Sink Hole No. 2—

This so-called sink hole is an old gravel pit located on the east bank of Los Gatos Creek just south of Casey Road. It is designated as "No. 2" because another pit exists on Finnemore's property upon which a percolation test had been attempted at an earlier date and abandoned because of the inconstancy of the water level in the pit. The spillway from the Duncan Ditch empties into this No. 2 pit and apparently a balance can be maintained between discharge from the spillway and absorption in the pit. A discharge measurement was made at the spillway and the area of the pit determined by stadia on January 8, 1932. The flooded area was 1.115 acres and the discharge of 5.93 second feet into the pit was apparently all being absorbed thus indicating an absorption rate of 5.32 second feet per acre.

The accuracy of this absorption rate depends largely upon the correctness of the statement made by Mr. W. Finnemore that the water level in the pit remained unchanged for one week and that the discharge from the spillway was likewise constant.

APPENDIX E

RAINFALL PENETRATION DATA

RAINFALL PENETRATION IN THE SANTA CLARA VALLEY

By C. A. Taylor

April, 1930.

A general survey of the Santa Clara Valley was made April 4 to 6, 1930, with regard to the possibility of direct penetration of rainfall on the valley floor. Thirty-one holes were drilled and notes taken on moisture conditions and soil type. It was intended that samples be obtained to depths of twenty-four feet but this was not always possible as rock fragments were usually encountered that limited the depth of the hole. The data from each location are appended.

The soil on the valley floor is generally of a loam or heavier texture. Plant roots penetrate to considerable depths and create a large deficiency in soil moisture at the end of the summer season. This is especially true in deciduous orchards which predominate on the valley floor. Veihmeyer, (Veihmeyer, F. J., Some Factors Affecting the Irrigation Requirements of Deciduous Orchards, Hilgardia Vol. 2, No. 6, January, 1927, Page 157, Table 5) indicates that the fall deficiency in soil moisture below field capacity in mature prune orchards is very close to 12 acre-inches per acre in the upper 12 feet of soil. Cover crops are usually grown during the winter, and the loss by evaporation and transpiration during the rainy season is probably not less than 8 acre-inches per acre. It would seem therefore that upwards of 20 inches of rain would be required before direct penetration of rain is at all likely to occur in the deciduous orchards of this area.

A certain few heavily irrigated orchards were found to be wet through the full depth of the root zone, but much of the deep percolation here should be charged to return waters resulting from over irrigation. The soil is deep; the crops are mainly deep rooted deciduous; the topography is relatively flat; and considering these factors irrigation practice should be such that practically all of the normal rainfall available for storage is held within the root zone.

Cover crops that are left until late in March consume a large amount of moisture. It was estimated that some of the cover crops would use upwards of 3.0 acre-inches per acre per month in the late spring. It is obvious then that cover crops left in after the middle of February must necessarily have a considerable cost of water charged against them.

Samples in the Milpitas Area, seven miles north of San Jose, showed no dry soil within the root zone. However, the soil in that area is typically a heavy clay, so that it is questionable if rainfall penetrates through to the pumping stratas.

In conclusion, it is thought that normal rainfall on the Santa Clara Valley floor does not contribute materially to the underground water supply by direct penetration through the root zone. A more beneficial use of the water supply from rainfall should be secured by discing in the cover crops earlier, even though it be at the expense of some fertilizer value.

Tests of Penetration *

TEST 1

Leroy Anderson peach orchard, located 6 miles southwest of San Jose. Rain to date 11.83 inches. Not irrigated since summer 1929. Hole No. 1 located on north side of drive half way in to house. Depth of rainfall penetration not apparent.

0–17 feet—moist clay loam
17–18.5 feet—partly dry gravel and sand

TEST 2

Hole No. 2, located two trees west of Hole No. 1. Depth of rainfall penetration not apparent.

0– 6.5 feet—moist clay loam
6.5–13.0 feet—partly moist loam with some gravel
13.0–17.0 feet—partly dry gravel and sand

* Survey conducted by A. T. Mitchelson, Frank Adams, Leroy Anderson, J. E. Christiansen and C. A. Taylor.

TEST 3

Hole No. 3, located on north side of drive near house. Depth of rainfall penetration not apparent. Probably below root zone.

0– 9.0 feet—moist clay loam
9.0–13.0 feet—moist clay loam with some gravel
13.0–17.0 feet—moist gravel and sand

TEST 4

Payne barley field, located 7 miles southwest of San Jose. Rain to date about 12.5 inches. Not irrigated. Barley is 6–8 inches high. Penetration of rain = 3.5 feet.

0– 3.5 feet—moist clay loam
3.5– 8.0 feet—dry clay loam
8.0–10.0 feet—partly moist clay loam
10.0–18.0 feet—moist clay loam
18.0–20.0 feet—moist sandy loam with gravel
20.0–22.0 feet—generally moist gravel and sand with small dry strata of sand at 21.0 feet

TEST 5

Congress Junction triangle of grass and brush land, located 8 miles southwest of San Jose. Rain to date 13.42 inches (gage at Hopewell Ranch ½ mile south). Depth of rainfall penetration not apparent. Probably below root zone.

0– 4.0 feet—moist loam with gravel
4.0–12.0 feet—moist gravel and coarse sandy loam
12.0–17.0 feet—moist gravelly loam

TEST 6

E. R. Gates prune orchard, located 1 mile east of Saratoga. Rain to date 19.7 inches. Not irrigated. Penetration of rain = 10.0 feet.

0– 3 feet—moist loam
3.0–10.0 feet—moist sand and sandy loam
10.0–17.0 feet—dry loam sand
17.0–22.0 feet—partly moist clay

TEST 7

D. Carmichael prune orchard, located 1 mile north of Saratoga. Rain to date probably about 20 inches. Not irrigated. Penetration of rain = 11.5 feet.

0– 4.0 feet—moist loam
4.0–11.5 feet—moist gravelly loam and some sand
11.5–12.0 feet—dry gravelly sand

TEST 8

H. Moser prune orchard, located 3 miles north of Saratoga. Rain to date 14.6 inches. Not irrigated. Penetration of rain is apparently about 7.5 feet.

0– 7.5 feet—moist loam
7.5–14.0 feet—partly dry loam with gravel
14.0–17.0 feet—partly moist clay loam

TEST 9

Apricot orchard, 1½ miles west of Westside (10 miles west of San Jose). Rain—no data. Irrigation—no data. Penetration of rain held up by clay layer at 7.0–7.5 feet.

0– 6.0 feet—moist loam
6.0– 7.0 feet—wet loam (some free water)
7.0– 7.5 feet—moist clay
7.5–11.6 feet—partly moist sandy loam

TEST 10

Wood apricot orchard, located 11 miles west of San Jose. Rain—no data. Irrigated March 26–30, 1930. Penetration of rain not apparent.

0–10.0 feet—moist loam
10.0–17.0 feet—moist gravel and sand with some loam

TEST 11

Apricot orchard, at Third Street and Campbell Avenue, Campbell. Rain to date 9.7 inches. Irrigated occasionally in small basins. Sample taken on center line away from effect of basins. Penetration of rain = 3.0 feet.

0– 3.0 feet—moist loam
3.0–18.0 feet—dry loam

TEST 12

Apricot and prune orchard, located 1 mile west and ½ mile south of Campbell. Rain to date probably about 9.7 inches. Not irrigated this winter. Penetration of rain = 4.0 feet.

0– 3.0 feet—moist loam
3.0– 4.0 feet—wet clay loam
4.0– 6.0 feet—dry clay loam

TEST 13

Prune orchard, located 1 mile west and ½ mile south of Campbell. Rain to date probably about 9.7 inches. Irrigated March 10–14, 1930. Depth of water applied = 18.5 acre-inches per acre. Penetration of rain not apparent due to excessive irrigation.

0– 3.0 feet—moist loam with some gravel
3.0–14.0 feet—moist coarse gravelly loam and sand
14.0–17.0 feet—wet coarse gravelly loam and sand, considerable free water

TEST 14

Farrington cherry orchard, located 4 miles south of San Jose. Rain—no data. Heavily irrigated. Penetration of rain not apparent.

0– 9.0 feet—moist loam
9.0–16.0 feet—wet loam, some free water

TEST 15

Variety deciduous orchard (Farrington's), located 4 miles south of San Jose. Rain—no data. Usually gets light spring irrigation. Penetration of rain = 3.0 feet.

0– 3.0 feet—moist loam
3.0–18.0 feet—dry loam
18.0–24.0 feet—partly dry loam

TEST 16

E. Howes prune orchard, located 7 miles south of San Jose. Rain to date 13.85 inches. Not irrigated. Penetration of rain is below 10 feet.

0– 2.0 feet—moist loam
2.0–10.0 feet—moist gravelly loam

TEST 17

Apricot and prune orchard, located on Branheim Road, 7 miles south of San Jose. Rain to date probably about 13 inches. Not irrigated. Penetration of rain is probably about 5 feet.

0– 3.0 feet—moist loam
3.0– 4.0 feet—partly moist clay
4.0– 5.0 feet—partly moist gravelly loam
5.0–12.0 feet—dry loam
12.0–13.0 feet—dry clay loam

TEST 18

Oat field ½ mile east of Milpitas (7 miles north of San Jose). Rain to date about 9.5 inches. Penetration of rain held up by tight clay probably about 6 feet.

0– 6.0 feet—wet clay
6.0–13.0 feet—moist clay

TEST 19

Pear orchard, located 1 mile west of Milpitas. Rain to date 9.5 inches. Irrigated with four 6-inch irrigations per year. Penetration of rain held up by tight clay.

0– 3.0 feet—moist loam
3.0– 4.0 feet—wet loam
4.0– 5.0 feet—wet sand, free water
5.0–17.0 feet—wet clay

TEST 20

Weed field at Pacific Gas and Electric station, ½ mile west of Milpitas. Rain to date 9.5 inches. Penetration of rain held up by tight clay.

0– 3.0 feet—moist loam
3.0–13.0 feet—wet clay, free water

TEST 21

Apricot orchard, located at Berryessa, 4 miles northeast of San Jose. Rain to date 8.95 inches. Not irrigated. Penetration of rain=3.7 feet.

0– 3.7 feet—moist loam
3.7– 7.5 feet—dry gravelly loam and sand
7.5–11.0 feet—partly dry loam
11.0–13.0 feet—partly moist loam

TEST 22

Grass and weed land located at San Jose Airport, 4 miles northeast of San Jose. Rain to date probably about 9.0 inches. Penetration of rain = 6.0 feet.

0– 3.0 feet—moist loam with gravel
3.0– 6.0 feet—moist gravelly sand with some loam
6.0–10.0 feet—dry gravelly sand with some loam

TEST 23

John Fair prune orchard, located 4 miles southeast of San Jose. Rain to date probably about 9.5 inches. Three to 4 irrigations applied per year. None since July, 1929. Penetration of rain not apparent.

0– 7.0 feet—moist clay
7.0–13.0 feet—moist sandy loam
13.0–17.0 feet—moist loam
17.0–24.0 feet—wet clay

TEST 24

H. Johnson prune orchard, located 8 miles southeast of San Jose. Rain to date—no data. Irrigated in spring of 1929. Penetration of rain = 2.7 feet.

0– 2.7 feet—moist clay loam
2.7–10.0 feet—dry clay loam
10.0–11.0 feet—partly dry clay loam
11.0–15.0 feet—moist clay loam
15.0–17.0 feet—wet clay
17.0–18.0 feet—moist clay loam
18.0–22.0 feet—wet clay

TEST 25

F. Brown prune orchard, located near Perrys, 5 miles northwest of Morgan Hill. Rain to date about 12 inches. Not irrigated. Penetration of rain = 5.0 feet.

0– 5.0 feet—moist clay loam
5.0–10.0 feet—dry loam
10.0–11.0 feet—dry gravel

TEST 26

Rosso prune orchard, located 1½ miles north of Morgan Hill. Rain to date—no data. Irrigated in summer of 1929. Penetration of rain probably below root zone.

0–14.0 feet—moist gravelly sandy loam
14.0–18.0 feet—moist clay loam

TEST 27

Prune orchard, located 2 miles south of Morgan Hill. Rain to date probably about 21 inches. Not irrigated. Penetration of rain apparently about 14 feet.

0–14.0 feet—moist gravelly sandy loam
14.0–16.0 feet—moist clay; probably not wet from this year's rain

TEST 28

Prune orchard, located 1 mile east of Gilroy. Rain—no data. Penetration of rain not apparent. Probably below root zone.

0– 9.0 feet—moist clay

TEST 29

Prune orchard, 2½ miles east of Gilroy. Rain—no data. Penetration of rain = 6.0 feet.

0–6.0 feet—moist clay
6.0–9.0 feet—partly dry clay

TEST 30

Scaglione prune orchard, located 11 miles east of Gilroy, along Pacheco Road. Hole No. 1. Rain to date 9.46 inches. Irrigated in fall of 1929. Penetration of rain = 4.5 feet.

0– 4.5 feet—moist silt loam
1.5– 9.0 feet—dry silt loam

TEST 31

Hole No. 2, ¼ mile east of Hole No. 1. Penetration of rain = 5.5 feet.

0– 5.5 feet—moist silt loam
5.5–10.0 feet—partly dry silt loam
10.0–15.6 feet—partly moist silt loam

APPENDIX F

WATER LEVEL DATA

1-G-No. 1, TOM SILVA

Location and description—150 feet northwest of Central Avenue and 0.3 miles northeast from San Francisco Highway. Deep well turbine.

Reference point—Rim of hole in flange, 12 inches above ground.

Elevation of reference point—47.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—90 feet.

Tibbetts & Kieffer Well No. 164—About five-eighths mile southeast. Elev. of R. P., 40.5.

Remarks—Nearest log, T. K. Nos. 170 and 171.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 164		**T. K. No. 164**		**1-G-No. 1**	
1920—		1921—		1930—	
Sept. 14	11.5	Jan. 4	3.9	Mar. 14	44.8
Oct. 8	9.6	Jan. 31	2.4	Dec. 17	48.9
Oct. 28	7.5	Feb. 18	1.9	1931—	
Nov. 29	7.1			Mar. 18	48.4
Dec. 8	6.7			Sept. 23	57.9
				Nov. 7	56.0
				Dec. 12	54.9
				1932—	
				Mar. 25	51.1
				Dec. 15	51.2
				1933—	
				April 1	50.9

2-F-No. 2, JOE JOAQUIN

Location and description—25 feet north of Charleston Road and 1,500 feet west of Sterlin Road; opposite end of Huff Avenue. Open casing, no pump.

Reference point—Top of casing at ground level.

Elevation of reference point—16.60, Aneroid by Division of Water Resources.

Use—Abandoned.

Depth—176 feet.

Tibbetts & Kieffer Well No. 250—Same as 2-F-No. 2. Elev. of R. P., 16.60.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 250		**2-F-No. 2**		**2-F-No. 2**	
1920—		1930—		1931—	
Nov. 2	[b]+0.05	Mar. 14	13.5	Mar. 18	16.7
Nov. 16	[c]+0.2	Dec. 19	17.5	Dec. 12	24.2
1922—				1932—	
May 15	[a]			Mar. 25	20.4
				Dec. 15	29.8
1923—				1933—	
Aug. 28	[d]			April 1	26.1

[a] Estimated flow 6 to 8 feet above ground.
[b] Effected by wells on upper lands.
[c] Capped.
[d] Well sealed.

2-H-No. 3, H. N. SCHROEDER

Location and description—250 feet south of Almond Avenue and 0.6 miles west of junction with El Monte Avenue. Deep well turbine.

Reference point—Center of gauge, 9 inches above concrete and 12 inches above ground.

Elevation of reference point—150.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—420 feet.

Tibbetts & Kieffer Well No. 196—About one-half mile southeast. Elev. of R. P., 182.0.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 196		**T. K. No. 196**		**2-H-No. 3**	
1920—		1921—		1930—	
Sept. 17	139.1	Jan. 4	136.7	Feb. 6	148.8
Oct. 8	140.6	Feb. 3	136.0	Dec. 18	154.3
Oct. 28	140.9	Feb. 19	135.5	1931—	
Nov. 15	136.0			Mar. 1	[a]165.0
Nov. 29	135.7			Mar. 21	[b]196.0
Dec. 9	135.3			Dec. 11	165.5
				1932—	
				Mar. 25	161.8
				Dec. 15	167.7
				1933—	
				Mar. 31	163.1

[a] After considerable pumping.
[b] Pumping.

2-G-No. 4, J. KETTLESON

Location and description—40 feet east of El Monte Avenue and 200 feet north of junction of Springer and El Monte Avenues. Deep well turbine.

Reference Point—Center of pressure gauge, 12 inches above flange of pumphead.

Elevation of reference point—118.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—180 feet.

Tibbetts & Kieffer Well No. 195—About one-quarter mile southwest. Elev. of R. P., 132.54.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 195		**T. K. No. 195**		**2-G-No. 4**	
1920—		1921—		1930—	
Sept. 17	92.0	Jan. 4	88.0	Feb. 6	116.7
Oct. 8	93.1	Feb. 3	86.8	Dec. 17	126.0
Nov. 15	40.3	Feb. 19	85.8	1931—	
Nov. 29	93.9			Mar. 17	122.3
Dec. 9	93.8			Dec. 11	[a]136.5
				1932—	
				Mar. 25	129.9
				Dec. 15	138.1
				1933—	
				Mar. 31	131.8

[a] Checked and found correct.

2-G-No. 5, K. NISHI

Location and description—300 feet west of Sterlin Road and 1¼ miles south of Charleston Road—Mountain View. Deep well turbine.

Reference point—Edge of hole about 8 inches above ground.

Elevation of reference point—52.5—Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Not known.

Tibbetts & Kieffer Well No. 240—About one-eighth mile north. Elev. of R. P., 55.47.

Remarks—Nearest logs, T. K. Nos. 229 and 242.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 240		**2-G-No. 5**		**2-G-No. 5**	
1920—		1930—		1932—	
Nov. 1	17.6	Mar. 14	50.6	Mar. 28	(a)
Nov. 16	18.0	Dec. 19	61.9	Mar. 30	(a)
Nov. 29	18.3			April 2	72.4
Dec. 9	18.8	1931—		Dec. 15	71.8
		Mar. 18	58.7		
1921—		Dec. 12	69.2	1933—	
Jan. 6	18.4			April 1	68.9
Jan. 31	17.0				
Feb. 17	15.5				

[a] Pumping.

3-H-No. 6, LOYOLA WATER COMPANY (FORMERLY LOS ALTOS GOLF CLUB)

Location and description—40 feet south of Magdalen Avenue and 525 feet west of Peninsular Railway. Installed deep well turbine June 3, 1930 (previously plunger pump).

Reference point—Top of casing.

Elevation of reference point—198.0, Aneroid by Division of Water Resources.

Use—Domestic.

Depth—300 feet or more.

Tibbetts & Kieffer Well No. 200—About one-half mile northeast. Elev. of R. P., 192.04.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 200		**3-H-No. 6**		**3-H-No. 6**	
1920—		1930—		1932—	
Sept. 15	133.7	Feb. 6	118.3	Mar. 25	52.4
		Dec. 31	[a]141.4	Dec. 14	53.8
1922—		1931—		1933—	
Feb. 15	133.5	Mar. 17	[a]128.5	Mar. 31	49.6
		June 29	75.5		
		Dec. 11	67.1		

[a] Doubtful.

3-H-No. 7, V. PAPAZIAN

Location and description—300 feet north of Central Avenue and 0.2 miles east of Springer Road (in garage) old well. open casing.

Reference point—Top of casing at ground level.

Elevation of reference point—143.28 Aneroid by Division of Water Resources.

Use—Abandoned.

Depth—Not known.

Tibbetts & Kieffer Well No. 199—Same as 3-H-No. 7. Elev. of R. P., 143.28.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 199		**T. K. No. 199**		**3-H-No. 7**	
1920—		1921—		1930—	
Sept. 15	96.7	Jan. 5	98.0	Feb. 6	143.7
Oct. 8	97.0	Feb. 2	93.1	Dec. 17	150.0
Oct. 28	[a]103.5	Feb. 19	90.2		
Nov. 16	95.9			1931—	
Nov. 29	95.0			Mar. 16	147.3
Dec. 9	94.7			Dec. 11	161.0
				1932—	
				Mar. 31	154.4
				Dec. 14	163.1
				1933—	
				Mar. 31	160.7

[a] Doubtful.

3-H-No. 8, S. J. BUBB

Location and description—40 feet north of Bubb Avenue, 0.5 miles west of Grant Road and 250 feet east of Mira Monte Avenue, deep well turbine.

Reference Point—Rim of hole in flange, near ground.

Elevation of reference point—137.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—347 feet.

Tibbetts & Kieffer Well No. 199—About three-eighths mile west. See 3-H-No. 7.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 3	138.2	Mar. 16	145.1	Mar. 31	152.8
Dec. 17	150.7	Sept. 23	173.5	Dec. 14	157.9
		Nov. 7	170.2		
		Dec. 11	160.2	1933—	
				Mar. 31	152.5

3-H-No. 9, BUBB ESTATE

Location and description—50 feet west of Grant Road and 200 feet north of Bubb Avenue. Deep well turbine.

Reference point—Rim of hole, northwest side of flange, 18 inches above ground.

Elevation of reference point—147.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—323 feet.

Tibbetts & Kieffer Well No. 222—About one-half mile northeast. Elev. of R.P., 125.88

U. S G. S. Well No. 1774—Is probably identical with 3-H-No. 9. Elev. of R. P., 144.05.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
U. S. G. S. 1774		**T. K. No. 222**		**3-H-No. 9**	
1914—		1920—		1930—	
Jan. 30	75.5	Sept. 27	80.1	Feb. 3	135 2
Mar. 6	71.0	Oct. 20	78.3	Dec. 17	150.9
April 4	66.5	Oct. 29	78.0		
		Nov. 17	77.4	1931—	
		Nov. 30	77.1	Mar. 16	148 5
		Dec. 10	77.9	Dec. 11	162.7
		1921—		1932—	
		Jan. 6	76.0	Mar. 31	157.2
		Feb. 2	72.4	Dec. 14	161.0
		Feb. 21	69.5		
		1922—		1933—	
		Feb. 14	74.2	Mar. 31	155 9

3-G-No. 10, L. BAZZARI

Location and description—50 feet west of Whisman Avenue and 2,800 feet north of Southern Pacific R. R. crossing. Deep well turbine.

Reference point—Rim of hole in flange 12 inches above ground.

Elevation of reference point—75.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—95 feet.

Tibbetts & Kieffer Well No. 273—About three-eighths mile south. Elevation of R. P., 48.67.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 273		**T. K. No. 273**		**3-G-No. 10**	
1920—		1921—		1930—	
Sept. 16	12 6	Jan. 7	12.6	Mar. 14	[a]42 4
Oct. 8	12.1	Jan. 31	t1.0	Dec. 19	70 1
Oct. 28	13.8	Feb. 17	10.5		
Nov. 16	12.1			1931—	
Nov. 30	11.8	1922—		Mar. 18	70 1
Dec. 9	11.1	May 15	10.8	Sept. 23	76.4
				Nov. 7	75.8
		1923—		Dec. 12	[b]66.4
		Aug. 28	18.1		
				1932—	
				Mar. 25	([b])
				Mar. 30	75.6
				Dec. 15	76.2
				1933—	
				April 1	75.9

[a] Doubtful.
[b] Too much moisture.

3-G-No. 11, S. NISHIURA

Location and description—175 feet east of Whisman Avenue and one-half mile north of Southern Pacific R. R. crossing. Deep well turbine.

Reference point—Rim of hole in flange, 18 inches above ground.

Elevation of reference point—77.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—150 feet.

Tibbetts & Kieffer Well No. 257—About three-quarter mile southwest. Elev. of R. P., 107.52.

Remarks—Nearest log T. K. No. 283.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 257		**T. K. No. 257**		**3-G-No. 11**	
1920—		1921—		1930—	
Sept. 15	60.3	Jan. 6	58.1	Mar. 14	67.0
Oct. 8	60.8	Jan. 31	53.8	Dec. 19	77.2
Oct. 20	60.3	Feb. 17	49.5		
Nov. 1	61.6			1931—	
Nov. 16	60.5	1922—		Mar. 18	76.3
Nov. 29	60.0	May 15	56.2	Dec. 12	84.8
Dec. 9	60.2				
		1923—		1932—	
		Aug. 28	60.0	Mar. 25	87.0
				Dec. 15	84.9
				1933—	
				April 1	82.8

3-F-No. 12, U. S. NAVY—SUNNYVALE AIRPORT

Location and description—At bend of Whisman Avenue and 1¼ miles north of Southern Pacific R. R. crossing. Deep well turbine.

Reference point—Rim of hole in flange at ground level.

Elevation of reference point—42.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Not known.

Tibbetts & Kieffer Well No. 273—About three-eights mile west. See 3-G-No. 10.

Remarks—Nearest logs, T. K. No. 274 and 283.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface feet
1930—		1931—		1932—	
Mar. 14	34.3	Mar. 18	42.7	Mar. 25	50.8
Dec. 19	43.6	Sept. 23	70.7	Dec. 15	52.4
		Nov. 7	57.2		
		Dec. 12	49.8	1933—	
				April 1	47.1

3-H-No. 13, A. H. BERGSTROM

Location and description—300 feet east of Mira Monte Avenue and 1,100 feet north of Fremont Avenue, 125 feet east of Permanente Creek. Deep well turbine.

Reference point—Rim of hole in flange, 6 inches above ground.

Elevation of reference point—218.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—450 feet.

Tibbetts & Kieffer Well No. 200—About one-half mile northwest. See 3-H-No. 6.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 6	218.0	Mar. 16	217.4	Mar. 31	227.5
Dec. 31	225.0	Dec. 11	237.1	Dec. 14	223.8
				1933—	
				Mar. 31	221.9

3-H-No. 14, S. H. KIEFER

Location and description—115 feet west of Grant Road and 700 feet south of Fremont Avenue. Deep well turbine.

Reference point—Center of gauge, 6 inches above concrete and 18 inches above ground.

Elevation of reference point—225.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—530 feet.

Tibbetts & Kieffer Well No. 201—About one-eighth mile northwest. Elev. of R. P., 232.33.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 201		**3-H-No. 14**		**3-H-No. 14**	
1920—		1930—		1933—	
Sept. 17	164.0	Feb. 3	224.8	Mar. 31	238.0
Oct. 16	167.6				
Nov. 17	166.0	1931—			
Nov. 30	(a)	Mar. 18	216.0		
Dec. 10	(a)	Dec. 11	248.1		
1921—		1932—			
Jan. 6	169.4	Mar. 24	242.1		
Feb. 2	169.9	Dec. 14	243.8		
Feb. 21	166.8				

[a] Obstruction, impossible to measure.

3-H-No. 15, P. H. FRETZ

Location and description—40 feet west of Grant Road and 550 feet north of Fremont Avenue. Deep well turbine and Kewanee automatic.

Reference point—Center of gauge, 3 inches above concrete floor and 7 feet below ground.

Elevation of reference point—205 0, Aneroid by Division of Water Resources.

Use—Domestic.

Depth—603 feet.

Tibbetts & Kieffer Well No. 201—About one-quarter mile southwest. See 3-H-No. 14.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 3	195 5	Mar. 16	201 7	Mar. 24	217 1
June 3	216 2	Dec. 11	215 3	Dec. 15	204 9
Dec. 17	205 4			1933—	
				Mar. 31	198 9

3-H-No. 16, F. G. ROSE

Location and description—100 feet north of Fremont Avenue and 0.25 miles east of Grant Road. Deep well turbine.

Reference point—Rim of hole for oil or air line at ground level.

Elevation of reference point—203.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—450 feet.

Tibbetts & Kieffer Well No. 201—About three-eighths mile southeast. See 3-H-No. 14.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1932—		1933—	
Feb. 5	202 0	Jan. 28	230 2	Mar. 31	216 9
Dec. 17	212 8	Feb. 11	221 0		
1931—		Feb. 25	219 2		
Mar. 16	209 0	Mar. 24	(a)		
Dec. 11	226 5	Mar. 30	(a)		
		April 2	220 5		
		Dec. 14	223 7		

[a] Pumping.

3-H-No. 17, PERMANENTE ORCHARD COMPANY

Location and description—800 feet east of Mira Monte Avenue and 600 feet north of Berry Avenue, produced. Deep well turbine.

Reference point—Lower edge of hole cut in casing.

Elevation or reference point—182.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—465 feet.

Tibbetts & Kieffer Well No. 200—About three-eights mile east. See 3-H-No. 6.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1932—		1933—	
Feb. 6	179.6	Mar. 28	[a]148.0	Mar. 31	191.7
Dec. 17	189.3	Mar. 30	[a]145.8		
1931—		Dec. 14	197.1		
Mar. 16	184.2				
Dec. 11	203.0				

[a] Probably affected by long continued creek diversion applied to orchard surrounding well.

3-H-No. 18, J. U. LEVIN

Location and description—180 feet north of Levin Avenue and 400 feet east of Grant Road. Deep well turbine.

Reference point—Rim of hole in flange near ground.

Elevation of reference point—164.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—650 feet.

Tibbets & Kieffer Well No. 211—About one-quarter mile northwest. Elev. of R. P., 156.67.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 211		3-H-No. 18		3-H-No. 18	
1920—		1930—		1932—	
Nov. 2	[a]92.4	Feb. 3	163.8	Mar. 24	181.6
Nov. 17	112.0	Dec. 17	175.0	Dec. 14	185.8
Dec. 10	115.2	1931—		1933—	
1921—		Mar. 16	171.6	Mar. 31	180.1
Jan. 6	103.4	Sept. 23	204.8		
Feb. 2	96.8	Nov. 7	192.9		
Feb. 21	86.2	Dec. 11	187.9		

[a] Doubtful.

3-H-No. 19, CHAS. B. ESCOLLE

Location and description—40 feet north of Levin Avenue and 0.45 miles east of Grant Road. Windmill.

Reference point—Hole in cover of casing at ground level.

Elevation of reference point—167.5, Aneroid by Division of Water Resources.

Use—Domestic.

Depth—174 feet.

Tibbetts & Kieffer Well No. 213—About one-quarter mile southeast. Elev. of R. P., 174.61.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 213		**T. K. No. 213**		**3-H-No. 19**	
1920—		1921—		1930—	
Sept. 16	120 4	Jan. 6	119 9	Feb. 3	162 5
Oct. 7	120 4	Feb. 2	116 7	Dec. 17	172 4
Oct. 19	117 9	Feb. 21	114 1		
Oct. 29	120 5				
Nov. 17	120 6				
Nov. 30	120 9				
Dec. 10	121 2				

3-G-No. 20, S. E. BARONI (FORMERLY J. M. NELSON)

Location and description—70 feet northeast of San Francisco Highway and 1,660 feet northwest from intersection with Mary Avenue. Deep well turbine.

Reference point—Top of concrete foundation block 18 inches above ground.

Elevation of reference point—148.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—480 feet.

Tibbetts and Kieffer Well No. 289—About three-eighths mile northwest. Elev. of R. P., 127.40.

Remarks—Nearest log T. K. No. 344.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 289		**3-G-No. 20**			
1920—		1930—			
Sept. 18	79 8	Mar. 14	148 2		
Sept. 25	78 8	Dec. 17	150 9		
Oct. 19	78 5				
Oct. 29	77 9	1931—			
Nov. 17	76 2	Mar. 19	148 6		
Nov. 30	75 8	April 18	[b]171 9		
Dec. 10	75 3	June 29	[b]168 5		
		Dec. 11	161 0		
1921—					
Jan. 6	74.8	1932—			
Feb. 3	72 5	Mar. 25	155 8		
Feb. 19	67 8	Dec. 15	160 8		
1922—		1933—			
Feb. 14	74 0	April 1	156 7		
Feb. 15	[a]80 0				

[a] Pumping; distance given by attendant.
[b] Checked and found correct.

3-F-No. 21, JOSEPH EASTWOOD

Location and description—50 feet north of Mountain View-Alviso Road and 900 feet east of end of Bernard (Bernardo) Avenue. Deep well turbine.

Reference Point—Concrete floor of pump house at ground level.

Elevation of reference point—69.5. Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts and Kieffer Well No. 356—About three-eighths mile east. Elev. of R. P., 66.15.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 356		**T. K. No. 356**		**3-F-No. 21**	
1920—		1921—		1930—	
Sept. 16	23.8	Jan. 3	19.7	Mar. 14	69.5
Sept. 24	21.8	Jan. 31	19.0	Dec. 19	82.9
Oct. 20	21.7	Feb. 17	17.4		
Oct. 29	21.5			1931—	
Nov. 16	20.9	1922—		Mar. 18	[a]73.2
Nov. 30	20.5	May 15	22.3	Dec. 12	[b]93.3
Dec. 10	20.1				
		1923—		1932—	
		Aug. 28	26.9	Mar. 25	[b]88.7
				Dec. 15	85.4
				1933—	
				April 1	80.9

[a] Checked and found correct.
[b] Doubtful.
Note—T. K. No. 356 had 6 feet of water in pit on November 25, 1919.

3-F-No. 22, MELBA DAIRY

Location and description—300 feet north of Mountain View—Alviso Road and 0.4 miles east of intersection with Jagels Road. Deep well turbine.

Reference point—Rim of hole in flange, at ground level.

Elevation of reference point—37.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Deep well, depth unknown.

Tibbetts and Kieffer Well No. 279—About three-eighths mile southwest. Elev. of R. P., 45.42.

Remarks—For log of 3-F-No. 22 see T. K. No. 369

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 279		**T. K. No. 279**		**3-F-No. 22**	
1920—		1921—		1930—	
Sept. 16	14.9	Jan. 3	11.7	Mar. 13	21.9
Oct. 8	9.6	Jan. 31	10.1	Dec. 19	34.4
Oct. 20	8.5	Feb. 17	9.5		
Oct. 29	7.9			1931—	
Nov. 16	6.9	1922—		Mar. 19	27.9
Nov. 30	6.2	Feb. 15	11.0	Sept. 19	[a]149.0
Dec. 10	5.9	May 15	[a]11.3	Nov. 7	51.4
				Dec. 14	46.9
		1923—			
		Aug. 28	10.6	1932—	
				Mar. 26	34.4
				Dec. 2	42.3
				1933—	
				April 3	36.2

[a] Pumping.

4-H-No. 23, KING RANCH

Location and description—One-half mile east of Grant Road and one-third mile south of Fremont Avenue. Deep well turbine.

Reference point—Center of gauge, 12 inches above ground.

Elevation of reference point—218.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—404 feet.

Tibbetts and Kieffer Well No. 303—About one-half mile southeast. Elev. of R. P., 237.14.

Remarks—Early Spring capacity of 4-H-No. 23, is 500 g. p. m.; later in Spring, yield is diminished to 200 to 300 g. p. m. Yield, seven years ago is reported as 900 g. p. m.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 303		**4-H-No. 23**		**4-H-No. 23**	
1920—		1930—		1932—	
Sept. 11	183.5	Feb. 3	203.0	Mar. 24	208.3
Sept. 25	182.0	Dec. 17	207.3	Dec. 14	237.9
Oct. 19	180.0				
Oct. 29	[a]189.4	1931—		1933—	
Nov. 17	184.1	Mar. 16	[c]225.3	Jan. 16	239.7
Nov. 30	184.5	Dec. 11	215.3	Mar. 31	231.4
Dec. 10	183.8				
1921—					
Jan. 13	178.0				
Feb. 7	[b]				

[a] Pumped 9 hours, October 28, 1920.
[b] Water flowing into casing at 150.1.
[c] 700 g. p. m. pumped from well 500 feet to west for a week.

4-H-No. 24 LUCY McCOMB

Location and description—225 feet south of Fremont Avenue and 0.4 miles east of Grant Road, 2,200 feet west of Stevens Creek. Deep well turbine.

Reference point—Center of gauge, 12 inches above ground, to and including February 5, 1930, then edge of hole at pump flange.

Elevation of reference point—210.5 to and including February 5, 1930, then 209.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—412 feet.

Tibbetts & Kieffer Well No. 201—About one-half mile west. See 3-H-14.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1932—			
Feb. 5	[a]235.6	Mar. 24	225.6		
Dec. 17	217.4	Dec. 14	229.1		
1931—		1933—			
Mar. 16	224.3	Jan. 16	229.2		
Dec. 11	229.8	Mar. 31	221.4		

[a] Doubtful.

4-H-No. 25, OAK AVENUE WATER COMPANY

Location and description—30 feet north of center line of Oak Avenue, 0.35 mile east of Truman Avenue and 0.85 mile east of Grant Road. Deep well turbine.

Reference point—Center of guage 2 inches above concrete and 6 inches above ground.

Elevation of reference point—197.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—550 feet.

Tibbetts & Kieffer Well No. 297—About one-quarter mile southeast. See 4-H-No. 26.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 3	202 3	Mar. 16	207.9	Jan. 28	219.6
Dec. 17	209 2	Dec. 11	222.9	Feb. 11	218.0
				Feb. 25	215.0
				Mar. 24	217.3
				Dec. 14	221.2
				1933—	
				Mar. 31	215.7

4-H-No. 26, MRS. H. MATSON

Location and description—300 feet east of Wright Avenue and one-quarter mile south of Fremont Avenue. Deep well turbine.

Reference point—Rim of hole in flange near ground level.

Elevation of reference point—206.0 Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—400 feet.

Tibbetts & Kieffer Well No. 297—About one-half mile northwest. Elev. of R. P. 203.82.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 297		**4-H-No. 26**		**4-H-No. 26**	
1920—		1930—		1932—	
Sept. 15	149 5	Feb. 5	201.2	Jan. 28	230.5
Oct. 16	[a]144 7	Dec. 17	213.7	Feb. 11	221.1
Oct. 30	[a]146 4			Feb. 25	219.8
Nov. 17	142 6	1931—		Mar. 25	219 9
Dec. 1	141.6	Mar. 23	[b]218.9	Dec. 2	225.9
Dec. 15	141.1	Dec. 12	227.1		
				1933—	
1921—				Jan. 16	222 1
Jan. 6	147 5			April 1	225.8
Feb. 2	145.5				
Feb. 21	141.6				

[a] Pumping.
[b] Two days after pumping ceased.

4-H-No. 27, H. G. STELLING

Location and description—2,500 feet west of Hollenbeck Avenue and 0.3 mile north of Fremont Avenue. Deep well turbine.

Reference point—Rim of hole in flange, near ground level.

Elevation of reference point—183.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—350 feet.

Tibbetts & Kieffer Well No. 297—About three-eighths mile west. See 4-H-No. 26.

U. S. G. S. Well No. 1749—Is possibly same as 4-H-No. 27. Elev. of R. P. 183.0.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
U. S. G. S. 1749		4-H-No. 27		4-H-No. 27	
1914—		1930—		1932—	
Dec. 20	90.0	Feb. 5	176.8	Mar. 25	(a)
1915—		Dec. 17	189.2	Mar. 28	(a)
April 15	90.5	1931—		Mar. 30	(a)
June 1	88.0	Mar. 21	[a]218.3	Mar. 31	[b]194.4
		Dec. 12	204.1	Dec. 15	204.1
				1933—	
				April 6	[c]200.9

[a] Pumping.
[b] At 5.30 a.m. after all night shut-down.
[c] Measurement made early in morning after all night shut-down.

4-G-No. 28, MRS. E. PERMER

Location and description—1,200 feet west of Hollenbeck Avenue and 1.0 mile north of Fremont Avenue. Deep well turbine.

Reference point—Rim of hole in flange at ground level.

Elevation of reference point—147.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—287 feet.

Tibbetts & Kieffer Well No. 294—About five-eighths mile west. Elev. of R. P. 174.82.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 294		4-G-No. 28		4-G-No. 28	
1920—		1930—		1933—	
Sept. 17	121.2	Feb. 6	143.4	April 1	162.1
Oct. 7	[a]104.3	Dec. 17	154.6		
Oct. 19	120.9				
Oct. 20	121.8	1931—			
Nov. 17	122.7	Mar. 19	154.8		
Dec. 1	121.8	Dec. 12	171.8		
Dec. 15	121.3				
		1932—			
1921—		Mar. 25	169.7		
Jan. 7	119.8	Dec. 15	165.3		
Feb. 3	114.3				

[a] Doubtful.

4-G-No. 29, L. E. BOCKS

Location and description—30 feet east of Hollenbeck Avenue and one-half mile south of San Francisco Highway. Deep well turbine.

Reference point—Rim of hole in flange.

Elevation of reference point—148.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 335—About one-half mile east. Elev. of R. P. 135.14.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 335		**T. K. No. 335**		**4-G-No. 29**	
1920—		1922—		1930—	
Sept. 27	83.0	May 5	86.0	Feb. 3	145.6
Oct. 16	85.7			Dec. 17	156.7
Oct. 30	(a)	1923—			
Nov. 17	82.0	Aug. 28	90.2	1931—	
Dec. 1	81.7			Mar. 19	156.0
Dec. 15	81.5			Sept. 23	213.8
				Nov. 7	173.5
1921—				Dec. 12	169.7
Jan. 7	80.5				
Feb. 3	79.0			1932—	
Feb. 21	78.0			Mar. 25	162.1
				Dec. 15	169.3
				1933—	
				April 1	165.1

[a] Pumping; water running in casing.

4-F-No. 30, C. J. McFALL

Location and description—200 feet west of Pastoria Avenue (Sunnyvale) and 0.3 miles south of Maude Avenue. Deep well turbine.

Reference point—Top of casing at ground level.

Elevation of reference point—82.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—500 feet.

Tibbetts & Kieffer Well No. 352—About one-quarter mile southeast. Elev. of R. P., 82.68.

Remarks—Nearest logs, T. K. Nos. 357 and 358.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 352		**T. K. No. 352**		**4-F-No. 30**	
1920—		1922—		1930—	
Oct. 8	35.3	Feb. 15	31.2	Mar. 13	72.0
Oct. 29	[a]35.8	May 16	37.7	Dec. 19	83.9
Nov. 17	34.8				
Nov. 30	34.1	1923—		1931—	
Dec. 10	33.5	Aug. 28	40.9	Mar. 19	80.8
				Dec. 14	91.8
1921—					
Jan. 3	31.5			1932—	
Jan. 29	30.7			Mar. 30	88.4
Feb. 17	27.1			Dec. 2	93.5
				1933—	
				April 3	91.6

[a] Pumping.

4-H-No. 31, V. ARONSON

Location and description—500 feet south of Homestead Avenue and 50 feet east of Peninsular Railway about 350 feet northwest of Stevens Creek. Open casing.

Reference point—Top of casing at ground level.

Elevation of reference point—284.0, Aneroid by Division of Water Resources.

Use—Not in use.

Depth—400 feet.

Tibbetts & Kieffer Well No. 204—About one-eighth mile northwest. Elev. of R. P., 274.30.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 204		**4-H-No. 31**		**4-H-No. 31**	
1920—		1930—		1933—	
Sept. 25	[a]Dry	Feb. 5	207 0	Mar. 30	214 8
Oct. 16	[a]Dry	Dec. 17	221 0		
Oct. 30	[a]Dry	1931—			
Nov. 17	[a]Dry	Mar. 16	208 8		
Nov. 30	[a]Dry	Dec. 10	221.8		
Dec. 10	[a]Dry	1932—			
1921—		Mar. 24	212.4		
Jan. 13	[b]Dry	Dec. 14	217.1		
Feb. 7	[b]Dry				
Feb. 25	[b]Dry				

[a] Dry at depth of 140 feet.
[b] Obstruction at 20 feet; dry at that depth.

4-H-No. 32, GREIFENHEIM RANCH

Location and description—One-half mile south of Homestead Avenue, 800 feet east of Greifenheim Drive and 1.0 mile west of Saratoga-Mountain View Road. Deep well turbine.

Reference point—Top of casing, lower surface of flange of head.

Elevation of reference point—275.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—700 feet.

Tibbets & Kieffer Well No. 306—About one-quarter mile south. Elev. of R. P., 279.09.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
U. S. G. S. 1741		**T. K. No. 306**		**4-H-No. 32**	
1914 —		1920—		1930—	
Dec. 20	100 0	Oct. 6	[a]232 2	Mar. 8	213 9
		Oct. 23	180 0	Dec. 31	258 7
		Oct. 30	191.3		
		Nov. 18	189.4	1931—	
		Nov. 30	195 0	Mar. 16	257 9
		Dec. 14	194 6	May 1	295 0
				Dec. 10	278 7
		1921 —		Dec. 10	[c]368 0
		Jan. 13	[b]205 6		
		Feb. 7	203 6	1932—	
		Feb. 25	202.3	Mar. 24	263 2
				Dec. 14	269.1
				1933—	
				Mar. 30	264.9

[a] Stopped pumping for measurement.
[b] Owner claims measurements in error for past three months; says reading should have been about 205.
[c] Measurement after five minutes pumping.

4-G-No. 33. B. K. BRILL

Location and description—150 feet southeast of Murphy Avenue (Sunnyvale) and 175 feet northeast of old San Francisco Highway. Deep well turbine.

Reference point—Rim of hole in flange about 12 inches above ground.

Elevation of reference point—124.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—175 feet.

Tibbetts & Kieffer Well No. 410—About three-eighths miles northwest. Elev. of R. P., 118.35.

Remarks—Nearest log, T. K. No. 409.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 410		**4-G-No. 33**		**4-G-No. 33**	
1920—		1930—		1932—	
Sept. 22	70.4	Mar. 13	117.0	Mar. 31	132.6
Oct. 19	74.4	Dec. 19	129.1	Dec. 2	141.9
Nov. 17	73.2				
Nov. 30	78.9	1931—		1933—	
Dec. 10	75.6	Mar. 19	126.5	April 3	140.2
		Sept. 19	148.1		
1921—		Nov. 7	146.7		
Jan. 3	72.0	Dec. 12	140.1		
Feb. 3	66.0				
Feb. 19	[a]68.0				

[a] Pumping from adjacent well.

4-F-No. 34, JOHN ALIAZ

Location and description—525 feet east of Fair Oaks Avenue and 60 feet north of unnamed street, 0.4 mile north of Washington Street (Sunnyvale). Deep well turbine.

Reference point—Top of casing about ground level.

Elevation of reference point—70.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—165 feet.

Tibbets & Kieffer Well No. 407—About three-eighths mile southwest. Elev. of R. P., 93.17.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 407		**T. K. No. 407**		**4-F-No. 34**	
1920—		1921—		1930—	
Sept. 11	41.6	Jan. 3	39.4	Mar. 3	53.1
Sept. 24	40.7	Feb. 3	38.9	Dec. 19	57.0
Oct. 20	41.5				
Oct. 29	43.2	1922—		1931—	
Nov. 17	39.9	May 16	44.5	Mar. 25	58.3
Nov. 30	39.7			Dec. 12	64.0
Dec. 10	39.1	1923—			
		Aug. 28	50.8	1932—	
				Mar. 30	64.8
				Dec. 2	69.6
				1933—	
				April 3	73.1

4-F-No. 35, M. GARCIA

Location and description—50 feet north of Taylor Avenue and 525 feet east of Fair Oaks Avenue (Sunnyvale). Deep well turbine in old pit.

Reference point—Lower surface of flange about 12 inches above ground.

Elevation of reference point—56.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—80 feet.

Tibbets & Kieffer Well No. 400—About one-eighth mile west. Elev. of R. P., 62.63.

Remarks—Nearest log, T. K. No. 401.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 400		**T. K. No. 400**		**4-F-No. 35**	
1920—		1921—		1930—	
Sept. 10	21.6	Jan. 3	14.0	Mar. 13	34.6
Oct. 19	16.7	Jan. 29	12.8	Dec. 19	37.7
Oct. 29	16.0	Feb. 17	12.2		
Nov. 17	16.5			1931—	
Nov. 30	17.0	1922—		Mar. 19	37.8
Dec. 10	16.7	May 16	19.7	Dec. 12	39.9
		1923—		1932—	
		Aug. 28	[a]46.8	Mar. 30	39.0
				Dec. 2	35.8
				1933—	
				April 3	40.8

[a] Pumping 12 feet distant.

4-E-No. 36, COUNTY OF SANTA CLARA

Location and description—20 feet south of center line of Mountain View-Alviso Road and 800 feet east of end of Lawrence Road, county road well and windmill.

Reference point—Top of casing about ground level.

Elevation of reference point—17.0, Aneroid by Division of Water Resources.

Use—Road sprinkling.

Depth—40 feet.

Tibbets & Kieffer Well No. 516—About five-eighths mile east. Elev. of R. P., 12.58.

Remarks—Nearest log, T. K. No. 514.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 516		**4-E-No. 36**		**4-E-No. 36**	
1920—		1930—		1932—	
Sept. 9	[a]+8.0	Mar. 13	3.5	Mar. 26	4.3
Sept. 22	[a]+8.0	Dec. 20	4.9	Dec. 2	4.9
Oct. 19	[a]+4.0				
Nov. 1	[a]+4.0	1931—		1933—	
		Mar. 19	4.0	April 3	4.3
		Dec. 14	3.9		

[a] Flowing.

4-I-No. 37, T. PUTNAM

Location and description—1.9 miles west of Saratoga-Mountain View Road and 30 feet south of McLellan Road, on east bank of Stevens Creek. Test well open casing.

Reference point—Top of casing, 12 feet south of well in use.

Elevation of reference point—339.5, Aneroid by Division of Water Resources.

Use—Test well.

Depth—Unknown.

Tibbetts and Kieffer Well No. 304—About seven-eighths mile northeast. Elev. of R. P., 324.90.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 304		**4-I-No. 37**		**4-I-No. 37**	
1920—		1930—		1932—	
Sept. 23	200.7	Jan. 25	[a]31.3	Mar. 25	(b)
Oct. 6	201.3	Dec. 15	66.9	Mar. 28	(b)
Oct. 20	206.8			Mar. 30	14.6
Oct. 29	207.2	1931—		Dec. 14	85.8
Nov. 18	207.6	Mar. 16	[a]71.9		
Nov. 30	Dry	Dec. 10	61.8	1933—	
Dec. 14	Dry			Jan. 16	26.0
Dec. 20	193.0			Mar. 30	[c]14.9
1921—					
Jan. 13	150.5				
Feb. 7	141.2				
Feb. 25	137.0				
1922—					
Feb. 15	141.7				

[a] Pumping from well 12 feet distant.
[b] Pumping.
[c] Stevens Creek flowing at time of measurement.
Note:—The well used 12 feet from test well very dependent on Stevens Creek; goes entirely dry in summer.

5-I-No. 38, M. BALDASSINNI

Location and description—200 feet west of Stelling Avenue and 880 feet south of McLellan Road.

Reference point—Rim of measuring hole.

Elevation of reference point—293.35, Tibbetts & Kieffer.

Use—Domestic.

Depth—223 feet.

Tibbets & Kieffer Well No. 311—Identical with 5-I-No. 38. Elev. of R. P., 293.35.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1920—		1930—		1932—	
Oct. 6	150.0	Jan. 25	184.5	Mar. 24	(a)
Oct. 20	149.7	Dec. 15	192.1	Mar. 26	200.2
Nov. 2	150.2			Dec. 14	202.1
Nov. 18	155.1	1931—			
Dec. 1	155.8	Mar. 16	192.8	1933—	
Dec. 14	155.0	Sept. 23	199.3	Jan. 16	201.8
		Nov. 7	[a]208.2	Mar. 30	203.0
1921—		Dec. 10	198.2		
Jan. 13	153.5				
Feb. 7	154.0				
Feb. 25	154.0				

[a] Pumping.

5-H-No. 39, A. F. SCHERMERHORN

Location and description—80 feet south of Stevens Creek Road and 60 feet west of Stelling Road. Deep well turbine.

Reference point—Rim of measuring hole to and including January 25, 1930; then top of casing.

Elevation of reference point—269.5 to and including January 25, 1930; 269.1 thereafter; Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbets & Kieffer Well No. 306—About three-eighths mile northwest. See 4-H-No. 32.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1932—			
Jan. 25	218.5	Jan. 28	254.1		
Dec. 15	242.6	Feb. 11	253.7		
1931—		Feb. 25	253.2		
Mar. 16	238.9	Mar. 24	252.9		
April 18	242.3	Dec. 14	250.3		
June 29	249.5	1933—			
Nov. 7	253.9	Jan. 16	248.1		
Dec. 10	255.9	Mar. 30	245.8		

5-H-No. 40, A. SAICH

Location and description—300 feet north of Stevens Creek Road and 550 feet west of Stelling Road. Deep well turbine.

Reference point—Rim of hole at edge of flange, near ground level.

Elevation of reference point—283.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—500 feet.

Tibbetts & Kieffer Well No. 306—About one-quarter mile northwest. See 4-H-No. 32.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 6	239.1	Mar. 16	248.8	Mar. 24	251.0
Dec. 31	249.3	Dec. 10	260.7	Dec. 14	254.2
				1933—	
				Mar. 30	256.9

5-H-No. 41, LEIB ESTATE

Location and description—0.35 miles north of Stevens Creek Road and 75 feet east of prolongation of Stelling Road. Deep well turbine.

Reference point—Center of gauge, 12 inches above ground up to and including January 6, 1931; then edge of hole beside air line, about 2 inches above ground.

Elevation of reference point—266.5 up to and including January 6, 1931; then 265.7; Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—500 feet.

Tibbetts and Kieffer Well No. 306—About one-quarter mile west. See 4-H No. 32.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 6	[a]317 5	Jan. 6	294 2	Mar. 24	(b)
Feb. 17	274.3	Mar. 16	246.3	April 17	272 9
		Dec. 5	(a)	Dec. 14	259.9
		Dec. 15	(a)		
		Dec. 25	279.6	1933—	
				Mar. 30	(c)

[a] Pumping.
[b] Measurement impossible; water from Stevens Creek being conveyed by pipe line into well.
[c] Casing filled and top sealed with concrete.

5-H-No. 42, S. F. LEIB ESTATE

Location and description—100 feet west of Saratoga-Mountain View Road and 2,750 feet south of Homestead Road. Deep well turbine.

Reference point—Center of gauge 18 inches above ground up to and including December 31, 1930; then edge of hole for oil pipe 6 inches above ground.

Elevation of reference point—233.0 up to and including December 31, 1930; then 232.0, Aneroid by Division of Water Resources.

Use—Public utility; domestic and irrigation.

Depth—601 feet.

Tibbetts & Kieffer Well No. 306—About three-quarters mile southwest. See 4-H-No. 32.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 5	[a]230 6	Mar. 16	219.2	Jan. 28	(b)
Feb. 17	178.3	Dec. 10	235.4	Feb. 11	(b)
Dec. 31	221 2			Feb. 25	228 5
				Mar. 24	230 9
				Dec. 14	(a)
				Dec. 16	(a)
				1933—	
				Mar. 30	231 9

[a] Pumping.
[b] Water being conveyed into well from creek.

4-H-No. 43, F. P. McCRAY

Location and description—180 feet east of Saratoga-Mountain View Road and 0.4 miles north of Homestead Road; opposite end of Alberta Road. Deep well turbine.

Reference point—Center of gauge, 12 inches above concrete floor up to and including December 17, 1930; then top of I-beams.

Elevation of reference point—186.9 up to and including December 17, 1930; then 186.3, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—606 feet.

Tibbetts and Kieffer Well No. 324—Is identical with 4-H-No. 43. Elev. of R. P., 185.87.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 324		**4-H-No. 43**		**4-H-No. 43**	
1920—		1930—		1932—	
Sept. 15	127.5	Feb. 5	181.0	Feb. 11	195.5
Sept. 28	129.5	Dec. 17	192.5	Feb. 25	194.3
Oct. 22	127.5			Mar. 25	194.7
Nov. 17	126.8	1931—		Dec. 2	205.2
Dec. 1	126.0	Mar. 19	185.9		
Dec. 15	125.3	Dec. 12	202.7	1933—	
				April 1	198.8
1921—					
Jan. 13	126.7				
Feb. 7	126.8				
Feb. 24	124.0				

5-G-No. 44, THOS. BYRNE

Location and description—300 feet east of Old San Francisco Highway and 1,400 feet north of Fremont Road at Butchers Corners. Deep well turbine.

Reference Point—Top of casing 1.0 foot above ground

Elevation of reference point—119.0, Aneroid by Division of Water Resources

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 480—About three-quarters mile northeast. Elev. of R. P., 88.38.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 480		**5-G-No. 44**			
1920—		1930—			
Sept. 17	34.6	Mar. 14	93.8		
Oct. 20	34.6	Dec. 19	100.1		
Nov. 18	34.4				
Dec. 1	33.9	1931—			
Dec. 15	33.0	April 18	[b]105.1		
		Dec. 12	110.1		
1921—					
Jan. 7	33.2	1932—			
Feb. 12	32.2	Mar. 25	(c)		
Feb. 21	[a]32.5				

[a] Pumping.
[b] Not comparable with March values.
[c] Well abandoned; casing filled with trash.

5-F-No. 45, H. A. WOOLSEY

Location and description—500 feet east of Lawrence Road and 1,425 feet south of Agnew Road. Deep well turbine.

Reference point—Top of casing, ground level.

Elevation of reference point—42.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—300 feet.

Tibbetts & Kieffer Well No. 497—About three-eighths mile south. Elev. of R. P., 52.5.

Remarks—Nearest log, T. K. No. 503.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 497		**T. K. No. 497**		**5-F-No. 45**	
1920—		1921—		1930—	
Sept. 17	8.9	Jan. 7	2.3	Dec. 20	33.1
Oct. 20	10.1	Jan. 29	1.1		
Oct. 30	[a]12.0	Feb. 17	(b)	1931—	
Nov. 16	5.8			Mar. 19	29.3
Dec. 2	5.1	1922—		Dec. 14	42.4
Dec. 15	4.8	May 16	9.0		
				1932—	
		1923—		Mar. 26	31.3
		Aug. 28	[a]14.1	Dec. 5	38.6
				1933—	
				April 3	33.8

[a] Pumping.
[b] Flowing.

5-E-No. 46, R. H. JAMISON

Location and description—50 feet east of Coffin Road and 0.25 miles north of Agnew Road. Deep well turbine.

Reference point—Rim of hole in flange about 2 feet above ground level.

Elevation of reference point—29.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 528—About one-quarter mile south. Elev. of R. P., 31.99.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 528		**T. K. No. 528**		**5-E-No. 46**	
1920—		1922—		1930—	
Sept. 9	1.9	May 15	1.0	Mar. 13	8.4
Sept. 28	3.0			Dec. 20	20.7
Oct. 19	3.3	1923—			
Nov. 1	1.2	Aug. 29	6.6	1931—	
Nov. 19	(a)			Mar. 19	16.3
				Dec. 14	30.6
				1932—	
				Mar. 26	19.5
				Dec. 5	30.4
				1933—	
				April 3	23.7

[a] Well capped.

5-E-No. 47, DORA IRWIN

Location and description—30 feet east of Agnew Road, at bend, 0.35 miles east of Coffin Road and on center line of Agnew Road produced east. Deep well turbine.

Reference point—Rim of hole in flange, at ground level.

Elevation of reference point—31.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—175 feet.

Tibbetts & Kieffer Well No. 528—About 0.35 miles west. See 5-E-No. 46.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Mar. 13	11 6	Mar. 19	15 1	Mar. 26	18 0
Dec. 20	20 4	Sept. 19	50 0	Dec. 5	28 9
		Nov. 7	37.9		
		Dec. 14	29 4	1933—	
				April 3	22.2

5-D-No. 48, ALDEN FRENCH

Location and Description—50 feet northeast of San Jose, Alviso Road and 1.37 miles northwest of Montague Road, 1,750 feet beyond bend. Deep well turbine.

Reference point—Rim of hole in flange at ground level.

Elevation of reference point—17.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 718—About three-eighths mile northwest. Elev. of R. P., 13.00.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 718		**T. K. No. 718**		**5-D-No. 48**	
1920—		1921—		1930—	
Oct. 6	8.2	Jan. 5	6.2	Mar. 12	(a)
Oct. 25	7 6	Jan. 29	3 5	Dec. 20	11 4
Nov. 2	7 6	Feb. 17	3 3		
Nov. 18	7.3			1931—	
Dec. 3	7 0	1922—		Mar. 19	6 4
Dec. 16	6 6	Feb. 22	3 0	Sept. 19	53.1
		May 17	6 0	Nov. 7	(b)51.5
				Dec. 14	21.8
		1923—			
		Aug. 29	9 0	1932—	
				Mar. 28	11 6
				Dec. 5	22 1
				1933—	
				April 4	11 9

(a) Flowing.
(b) Pumping.

5-I-No. 49, J. LANNIS

Location and description—50 feet south of Prospect Road and 0.2 miles west of Cupertino-Saratoga Road. Deep well turbine.

Reference point—Rim of hole in flange at ground level.

Elevation of reference point—321.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—465 feet.

Tibbetts & Kieffer Well No. 316—About three-quarter mile northeast. See 5-I-No. 50.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Jan. 22	(a)	Mar. 16	197.5	Mar. 24	197.0
Feb. 17	(a)	Dec. 10	208.0	Dec. 14	200.1
Mar. 28	169.8				
Dec. 15	190.0			1933—	
				Mar. 30	201.2

[a] Water entering well; unable to make measurement.

5-I-No. 50, J. D. BLABON

Location and description—270 feet east of Saratoga-Mountain View Road and 0.55 miles south of Bollinger Road. Old well, open casing.

Reference point—Top of casing 1.0 foot above ground.

Elevation of reference point—271.23 by T. & K.

Use—No use.

Depth—270 feet.

Tibbetts & Kieffer Well No. 316—Identical with 5-I-No. 50. Elev. of R. P., 271.23.

Remarks—J. D. Blabon has three wells but buys water; good wells scarce in this vicinity.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1920—		1921—		1930—	
Sept. 15	163 3	Jan. 13	170 7	Jan. 24	201.0
Oct. 22	165 4	Feb. 7	166.5	Dec. 15	205 9
Nov. 2	175.0	Feb. 25	166.0		
Nov. 18	172 5			1931—	
Dec. 1	173.0	1922—		Mar. 16	202 4
Dec. 14	172.6	Feb. 15	167 2	Sept. 23	209.9
				Nov. 7	211 7
				Dec. 10	212.1
				1932—	
				Mar. 24	208.4
				Dec. 12	209 1
				1933—	
				Mar. 30	208.7

5-I-No. 51, FRANK WHITE

Location and description—1,100 feet due south of Bollinger Road from a point 500 feet west of intersection with Blaney Avenue. Deep well turbine.

Reference point—Top surface of 3½ x3½ foot steel plate on concrete foundation.

Elevation of reference point—248.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—449 feet.

Tibbetts & Kieffer Well No. 316—About one-half mile southwest. See 5-I-No. 50.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Jan. 24	205.1	Mar. 16	213.7	Mar. 24	223.4
Dec. 15	215.2	Sept. 23	226.5	Dec. 12	228.9
		Nov. 7	227.2		
		Dec. 10	227.2	1933—	
				Mar. 30	226.0

5-H-No. 52, H. H. JONES

Location and description—150 feet east of Blaney Avenue and 0.30 miles south of Stevens Creek Road. Windmill.

Reference point—Top of casing, 2.0 feet above ground.

Elevation of reference point—212.0, Aneroid by Division of Water Resources.

Use—Domestic.

Depth—300 feet.

Tibbetts & Kieffer Well No. 432—About one-quarter mile southwest. Elev. of R. P., 231.76.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 432		5-H-No. 52		5-H-No. 52	
1920—		1930—		1932—	
Sept. 15	148.7	Jan. 24	191.0	Jan. 28	211.5
Oct. 2	149.2	Dec. 15	203.1	Feb. 11	210.2
Oct. 20	149.8			Feb. 25	209.4
Nov. 2	150.2	1931—		Mar. 24	208.9
Nov. 18	152.0	Mar. 16	198.1	Dec. 14	219.1
Dec. 1	153.2	Sept. 23	222.9		
Dec. 14	152.9	Nov. 7	219.9	1933—	
		Dec. 10	216.5	Jan. 16	215.6
				Mar. 30	216.0
1921—					
Jan. 13	149.6				
Feb. 7	149.1				
Feb. 25	147.5				

5-G-No. 53, V. ANELLO

Location and description—75 feet east of Wolf Road and 350 feet north of Homestead Road. Deep well turbine.

Reference point—Top of measuring hole near ground level.

Elevation of reference point—158.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—585 feet.

Tibbetts & Kieffer Well No. 423—About three-eighths mile northwest. Elev. of R. P., 154.66.

Remarks—Near logs, T. K. Nos. 424, 427 and 458.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 423		5-G-No. 53		5-G-No. 53	
1920—		1930—		1932—	
Sept. 18	99.1	Mar. 13	147.7	Jan. 28	175.8
Oct. 2	96.4	Dec. 17	162.1	Feb. 11	167.2
Oct. 23	91.2			Feb. 25	164.7
Nov. 1	90.4	1931—		Mar. 25	[a]
Nov. 18	95.2	Mar. 17	156.4	Mar. 30	164.8
Dec. 15	93.7	Sept. 23	190.7	Dec. 2	174.8
		Nov. 7	[a]		
1921—		Dec. 12	173.1	1933—	
Jan. 12	95.2			April 1	167.3
Feb. 7	94.5				
Feb. 24	93.6				
1922—					
Feb. 14	96.2				

[a] Pumping.

5-G-No. 54, W. S. BENNETT

Location and description—250 feet west of Saratoga-Alviso Road and 0.25 miles south of San Francisco Highway. Deep well turbine.

Rererence point—Lower surface of flange; top of steel I-beams, 6 inches above ground and 12 inches above top of casing.

Elevation of reference point—109.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—398 feet.

Remarks—Nearest log T. K. No. 475.

Tibbetts & Kieffer Well No. 480—About five-eighths mile north. See 5-G-No. 44.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—			
Mar. 13	79.9	Mar. 19	107.7		
Dec. 17	105.0	Dec. 12	[a]		

[a] Well abandoned and casing filled; new well drilled. See 5-G-No. 54a.

5-G-No. 54a, W. S. BENNETT

Location and description—30 feet west and 10 feet south of 5-G-No. 54. Deep well turbine.

Reference point—Top of casing 1.0 foot above ground.

Elevation of reference point—109.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—Unknown.

Remarks—This well substituted for 5-G-No. 54.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1931—		1932—		1933—	
Dec. 12	113.4	Mar. 31	111.1	April 3	113.6
		Dec. 2	117.1		

5-G-No. 55, I. E. POMEROY

Location and description—40 feet east of Pomeroy Avenue and 0.25 miles south of San Francisco Highway. Deep well turbine.

Reference point—Center of gauge 12 inches above ground and 8 inches above concrete floor.

Elevation of reference point—97.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—525 feet.

Tibbetts & Kieffer Well No. 557—About one-quarter mile south. Elev. of R. P., 103.81.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 557		**T. K. No. 557**		**5-G-No. 55**	
1920—		1921—		1930—	
Sept. 9	54.3	Jan. 12	44.4	Mar. 13	73.6
Sept. 24	45.7	Feb. 3	[a]52.0	Dec. 17	89.9
Nov. 1	49.1	Feb. 21	42.0	1931—	
Nov. 16	50.0			Mar. 19	87.9
Dec. 2	49.7			Dec. 12	100.9
Dec. 16	49.0			1932	
				Mar. 29	91.8
				Dec. 2	101.4
				1933—	
				April 3	95.3

[a] Pumping.

5-G-No. 56, A. A. NASCIMENTO

Location and description—40 feet east of Lawrence Road and 0.55 miles north of San Francisco Highway. Deep well turbine.

Reference point—Rim of hole in flange at ground level.

Elevation of reference point—81.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—536 feet.

Tibbetts & Kieffer Well No. 480—About one-quarter mile southwest. See 5-G-No. 44.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Mar. 13	64 6	Mar. 19	76 2	Mar. 31	79 7
Dec. 20	77 4	Sept. 19	114 2	Dec. 2	90 0
		Nov. 7	102 2		
		Dec. 12	89 2	1933—	
				April 3	84 8

5-F-No. 57, M. E. ABREO

Location and description—150 feet north of Kifer Road and 1,000 feet west of Scott Lane. Deep well turbine.

Reference point—Top surface of concrete foundation for pump head.

Elevation of reference point—52.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—607 feet.

Tibbetts & Kieffer Well No. 681—About one-quarter mile west. Elev. of R. P., 47.92

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 681		**T. K. No. 681**		**5-F-No. 57**	
1920—		1921—		1930—	
Sept. 8	7 5	Jan. 7	2 9	Mar. 12	24.1
Sept. 22	[a]6 7	Jan. 29	[b]	Dec. 20	35.8
Oct. 19	6 4	Feb. 17	1 0		
Nov. 1	5.5			1931—	
Nov. 19	5.0	1922—		Mar. 19	31.4
Dec. 2	4 0	Mar. 15	4.3	Dec. 14	47.9
Dec. 15	3.9				
		1923—		1932—	
		Aug. 29	[c]	Mar. 26	32.9
				Dec. 5	47.1
				1933—	
				April 3	39.8

NOTE:—T. K. No. 681 measurements are of surface water only, deep well having been capped since September, 1920.
[a] Pumped preceding night.
[b] Flowing.
[c] Pumping.

5-D-No. 58, LAURIDSON BROS.

Location and description—60 feet north of Alviso-Milpitas Road and 0.5 miles west of Coyote River Bridge. Domestic well and tank.

Reference point—Top of casing about ground level.

Elevation of reference point—20.0, Aneroid by Division of Water Resources.

Use—Domestic.

Depth—Unknown.

Tibbetts & Kieffer Well No. 783—About one-half mile south. Elev. of R. P., 27.49.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 783		5-D-No. 58		5-D-No. 58	
1920—		1930—		1932—	
Sept. 21	6 1	Mar. 12	[b]+0 4	Mar. 28	10 8
Oct. 6	[a]	Dec. 20	15 6	Dec. 5	24 2
Oct. 25	[a]	1931—		1933—	
		Mar. 19	7 8	April 4	16.8
		Dec. 14	26 9		

[a] Flowing about 2.0 feet above casing.
[b] Flowing water forms pool 0.4 foot above top of casing.

6-C-No. 59, F. A. AMARAL

Location and description—50 feet north of Alviso-Milpitas Road and 0.3 miles west of Oakland Highway at Milpitas. Deep well turbine.

Reference point—Lower edge of measuring hole in side of head, 1.0 foot above ground.

Elevation of reference point—16.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—525 feet.

Tibbetts and Kieffer Well No. 774—About three-eighths mile east. Elev. of R. P., 20.0.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 774		T. K. No. 774		6-C-No. 59	
1920—		1921—		1930—	
Sept. 17	6 0	Jan. 5	[a]	Mar. 12	[a]+0 5
Oct. 6	4 3			Dec. 20	14 9
Oct. 25	3 6	1922—			
Nov. 2	3 5	May 17	1 5	1931—	
Nov. 18	2 7			Mar. 19	6 9
Dec. 3	2 1	1923—		Sept. 19	57 9
Dec. 16	1 3	Aug. 29	7 7	Nov. 7	51 4
				Dec. 14	26 1
				1932—	
				Mar. 28	10 8
				Dec. 5	25 1
				1933—	
				April 4	16 1

[a] Flowing.

6-I-No. 60, I. S. McINTYRE

Location and description—1,810 feet south of Prospect Road and 175 feet east of Langtry Avenue. Deep well turbine.

Reference point—Top of casing 6 inches above ground.

Elevation of reference point—297.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—250 feet.

Tibbetts and Kieffer Well No. 443—About one-half mile northeast. See 6-I-No. 75.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
May 8	138 6	Mar. 16	140.9	Jan. 28	154 1
Dec. 15	140 2	Dec. 10	154 8	Feb. 11	153.9
				Feb. 25	153.1
				Mar. 24	151 2
				Dec. 12	155.9
				1933—	
				Mar. 30	154 9

6-H-No. 61, C. W. HAMAN

Location and description—50 feet north of Bollinger Road and 1,000 feet west of Miller Avenue, east of Calabazas Creek. Deep well turbine.

Reference point—Rim of hole in flange.

Elevation of reference point—224.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 449—About three-eighths mile east. Elev. of R. P., 225.76.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 449		6-H-No. 61		6-H-No. 61	
1920—		1930—		1932—	
Sept. 18	149 5	Jan. 25	180 0	Jan. 28	216 1
Oct. 5	151 1	Dec. 15	206.6	Feb. 11	215 1
Nov. 1	157.6			Feb. 25	214 0
Dec. 1	159 0	1931—		Mar. 24	212 8
Dec. 14	158.6	Mar. 25	[a]227.2	Dec. 2	191 2
1921—		Dec. 15	220.7	1933—	
Jan. 13	149 0			Mar. 30	217.2
Feb. 8	145.5				
Feb. 25	144.4				

[a] Pumping.

6-H-No. 62, F. W. TANTAU

Location and description—30 feet north of Bollinger Road and 600 feet west of Johnson Avenue. Open casing in pit.

Reference point—Top of 10 inch casing in southeast corner of pit, about 120 feet deep.

Elevation or reference point—89.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—585 feet.

Tibbetts & Kieffer Well No 449—About one-quarter mile west. See 6-H-No. 61.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—					
Jan. 25	66.2				
Dec. 15	81.7				

NOTE.—Measurements at this well discontinued because of difficulties in obtaining reliable results. Well 6-H-No. 62a substituted.

6-H-No. 62a, HIND ORCHARD COMPANY

Location and description—250 feet south of Bollinger Road and 940 feet west of Johnson Avenue. Deep well turbine.

Reference point—Top of casing, 1.0 foot above ground.

Elevation of reference point—218.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—1,000 feet.

Remarks—This well is substituted for 6-H-No. 62.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1931—		1932—		1933—	
Mar. 16	195.9	Jan. 28	210.1	Mar. 30	207.9
Dec. 10	217.8	Feb. 11	208.9		
		Feb. 25	207.6		
		Mar. 24	205.9		
		Dec. 2	212.7		

6-H-No. 63, MRS. W. M. SCOTT

Location and description—40 feet east of Doyle Road and 0.7 miles south of Stevens Creek Road. Deep well turbine.

Reference point—Rim of hole in flange.

Elevation of reference point—188.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—285 feet.

Tibbetts & Kieffer Well No. 581—Probably the same as 6-H-No. 63. Elev. of R. P., 188.79.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 581		**6-H-No. 63**		**6-H-No. 63**	
1920—		1930—		1932—	
Sept. 18	121.2	Jan. 25	164.9	Mar. 24	183.5
Sept. 28	123.9	Dec. 15	179.1	Dec. 2	191.6
Oct. 22	138.3				
Nov. 1	[a]142.4	1931—		1933—	
Nov. 18	138.4	Mar. 16	174.0	Mar. 30	186.7
Dec. 1	139.0	Sept. 24	196.1		
Dec. 14	137.8	Nov. 7	199.8		
		Dec. 5	(a)		
1921—		Dec. 15	(a)		
Jan. 13	119.6	Dec. 25	197.1		
Feb. 8	117.5				
Feb. 25	116.0				

[a] Pumping.

6-G-No. 64, S. SCIALABBA

Location and description—200 feet east of Saratoga-Alviso Road and 0.6 miles south of Homestead Road. Deep well turbine.

Reference point—Rim of hole in flange about 1.0 foot above ground.

Elevation of reference point—151.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—394 feet.

Tibbetts & Kieffer Well No. 455—About one-eighth mile north. Elev. of R. P., 153.35.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 455		**T. K. No. 455**		**6-G-No. 64**	
1920—		1921—		1930—	
Sept. 11	95.6	Jan. 14	91.7	Mar. 13	131.9
Sept. 27	98.2	Feb. 8	91.2	Dec. 15	148.4
Oct. 23	93.8	Feb. 25	87.6		
Nov. 1	93.6			1931—	
Nov. 18	93.1			Mar. 16	141.9
Dec. 1	92.4			Sept. 24	172.3
Dec. 15	91.7			Nov. 7	174.0
				Dec. 10	160.5
				1932—	
				Mar. 24	147.8
				Dec. 2	157.4
				1933—	
				Mar. 30	154.4

6-F-No. 65, J. M. DENIS

Location and description—10 feet northeast of Southern Pacific Railroad right-of-way and 650 feet northwest from Scott Lane. Deep well turbine.

Reference point—Lower surface of flange of pumphead. 1.0 foot above ground.

Elevation of reference point—64.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 675—About one-eighth mile north. Elev. of R. P., 56.17.

Remarks—Nearest log T. K. No. 545.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 675		**T. K. No. 675**		**6-F-No. 65**	
1920—		1921—		1930—	
Sept. 17	6.0	Jan. 7	6 5	Mar. 12	34 8
Oct. 15	8 0	Jan. 29	3 7	Dec. 20	46 1
Nov. 3	9 0	Feb. 17	2 5		
Nov. 19	8 5			1931—	
Dec. 2	8 0	1922—		Mar. 19	43 2
Dec. 15	7 4	May 15	15 0	Dec. 14	56 7
		1923—		1932—	
		Aug. 29	6 3	Mar. 26	45 2
				Dec. 5	55 7
				1933—	
				April 3	49 1

6-E-No. 66, W. H. LINFORTH

Location and description—50 feet east of Santa Clara-Alviso Road at bend near Southern Pacific Railroad crossing one-half mile north of Kifer Road. Open casing to and including March 30, 1930; then a pump installed.

Reference point—Top of casing about ground level to and including March 30, 1930; then concrete around top of casing 12 inches above ground.

Elevation of reference point—35.58 by T. & K. to and including March 30, 1930; then 36.6.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 802—Identical. Elev. of R. P., 35.58.

Remarks—Formerly an artesian well.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 802		**6-E-No. 66**		**6-E-No. 66**	
1920—		1930—		1932	
Sept. 13	12 0	Mar. 12	12 6	Mar. 26	22 7
Oct. 15	7 0	Dec. 20	23 7	Dec. 5	33 2
Oct. 20	7 0				
Nov. 3	6 3	1931—		1933—	
Nov. 19	Capped	Mar. 19	19 5	April 3	26 2
		Dec. 14	33 9		

Capped.

6-E-No. 67, Y. HIROSE

Location and description—275 feet west of San Jose-Alviso Road and opposite end of Trimble Road. Deep well turbine.

Reference point—Rim of hole in flange 1.0 foot above ground.

Elevation of reference point—36.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 831—About three-quarter mile north east. See 6-D-No. 68.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Mar. 12	9.8	Mar. 19	20.4	Mar. 28	24.1
Dec. 20	20.2	Dec. 14	34.0	Dec. 5	33.1
				1933—	
				April 4	26.1

6-D-No. 68, H. LAPACHET

Location and description—600 feet north of Trimble Road and 0.65 miles east of San Jose-Alviso Road. Centrifugal pump above ground.

Reference point—Top of casing about 1.0 foot above ground.

Elevation of reference point—40.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 831—About one-eighth mile south. Elev. of R. P., 37.29.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 831		T. K. No. 831		6-D-No. 68	
1920—		1921—		1930—	
Sept. 15	14.0	Jan. 5	8.0	Mar. 11	11.2
Oct. 5	9.4	Feb. 4	6.4	Dec. 20	16.9
Oct. 22	9.6	Feb. 23	6.3		
Nov. 1	9.2			1931—	
Nov. 18	[a]9.8	1923—		Mar. 19	16.8
Dec. 3	8.7	Aug. 29	9.3	Dec. 14	[b]
Dec. 16	8.5				

[a] Pumping.
[b] New pump installed. No access to well.

6-D-No. 69, T. SAKAMOTO

Location and description—North of Trimble Road and west of Oakland Highway, 1,100 feet along power line from bend in Trimble Road. Deep well turbine.

Reference point—Top of casing, 1.0 feet above ground.

Elevation of reference point—38.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 783—One and one-quarter miles northwest. See 5-D-No. 58.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Mar. 11	15.0	Mar. 19	26.2	Mar. 28	31 9
Dec. 20	34.5	Dec. 14	41.1	Dec. 5	41.6
				1933—	
				April 4	32.5

6-C-No. 70, G. C. KATZ

Location and description—50 feet west of Dempsey Road and 400 feet south of Milpitas-Calaveras Road. Deep well turbine.

Reference point—Top surface of concrete supporting pump head 1.0 feet above ground.

Elevation of reference point—46.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—395.0 feet.

Tibbetts & Kieffer Well No. 874—About same location. Elev. of R. P., 46.16.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 874		T. K. No. 874		6-C-No. 70	
1920—		1921—		1930—	
Sept. 16	9 0	Jan. 10	9 7	Mar. 12	24 6
Oct. 8	10 2	Jan. 29	7 3	Dec. 20	33 9
Oct. 25	10 0	Feb. 17	6 0		
Nov. 2	10 0			1931—	
Nov. 18	10 0			Mar. 19	28 1
Dec. 3	10 0	1922—		Sept. 19	49 5
Dec. 16	10.0	Feb. 22	26 0	Nov. 7	46.9
				Dec. 14	42.1
				1932	
				Mar. 28	33 7
				Dec. 5	43 5
				1933—	
				April 4	36.9

6-I-No. 71, LOYST-BREEDING

Location and description—450 feet south of Cox Avenue and 1.1 miles west of Saratoga Avenue. Deep well turbine.

Reference point—Top of concrete foundation at ground level.

Elevation of reference point—344.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—515 feet.

Tibbetts & Kieffer Well No. 441—About one-quarter mile east. Elev. of R. P., 318.37.

Remarks—Log of T. K. No. 441 available.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 441		6-I-No. 71		6-I-No. 71	
1920—		1930—		1933—	
Sept. 25	114.3	Mar. 18	188.7	Mar. 23	202.6
Oct. 5	112.3	Dec. 3	201.2		
Oct. 23	116.8				
Nov. 2	117.3	1931—			
Nov. 22	118.3	Mar. 9	192.4		
Dec. 3	120.0	Dec. 2	207.6		
Dec. 17	117.7				
		1932—			
1921—		Mar. 18	202.9		
Jan. 1	110.7	Dec. 1	199.8		
Feb. 12	98.3				

6-I-No. 72, I. S. McINTYRE

Location and description—110 feet east of Langtry Avenue and one-half mile south of Prospect Road. Windmill.

Reference point—Top of 4" x 6" timber resting on concrete curb.

Elevation of reference point—305.5. Aneroid by Division of Water Resources.

Use—Domestic.

Depth—145 feet.

Tibbetts & Kieffer Well No. 441—About three-eighths mile south. See 6-I-No. 71.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—					
Jan. 20	141.5				
Dec. 15	Dry				

6-I-No. 73, FRANK ABERNATHY

Location and description—175 feet east of Saratoga Avenue, 300 feet south of Congress Junction Railroad crossing. Deep well turbine.

Reference point—Lower surface of flange of pump head, at ground level.

Elevation of reference point—331.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 441—About five-eighths mile northwest. See 6-I-No. 71.

Remarks—Nearest log, T. K. No. 441.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Mar. 28	104.5	Mar. 9	134.0	Mar. 18	100.4
Dec. 3	130.5	Dec. 2	145.1	Dec. 1	114.2
				1933—	
				Mar. 23	102.8

6-I-No. 74, JOE COX

Locatinn and description—40 feet north of Cox Avenue and 300 feet west of Saratoga (Campbell) Creek. Deep well turbine.

Reference point—Rim of hole in flange, 6 inches above ground.

Elevation of reference point—302.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—400 feet.

Tibbetts & Kieffer Well No. 441—About three-eighths mile southwest. See 6-I-No. 71.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Mar. 18	111.9	Mar. 16	133.1	Jan. 28	132.7
Dec. 3	125.8	Mar. 20	132.7	Feb. 11	126.9
		Sept. 16	138.9	Feb. 25	119.1
		Nov. 5	138.8	Mar. 18	101.9
		Dec. 2	138.9	Dec. 1	115.4
				1933—	
				Mar. 23	128.3

6-I-No. 75, A. H. JEPSON

Location and description—620 feet south of Prospect Road and 200 feet east of Titus Avenue. Deep well turbine.

Reference point—Rim of hole in flange at ground level.

Elevation of reference point—272.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—424 feet.

Tibbetts & Kieffer Well No. 443—About 75 feet west. Elev. of R. P., 273.10.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 443		**T. K. No. 443**		**6-I-No. 75**	
1920—		1921—		1930—	
Sept. 11	95 7	Jan. 15	98 0	Jan. 20	164 3
Oct. 5	101 4	Feb. 11	97 0	Dec. 15	184 6
Oct. 20	94.0				
Nov. 2	96 9	1922—		1931—	
Nov. 22	96 4	Feb. 15	93.5	Mar. 16	181 9
Dec. 3	97.1			Sept. 23	199 5
Dec. 17	95.2			Dec. 10	192 1
				1932—	
				Mar. 24	186.2
				Dec. 12	180 7
				1933—	
				Mar. 30	181.6

6-H-No. 76, G. TUSSO

Location and description—45 feet north of Graves Avenue and 0.4 miles west of Saratoga Avenue. Deep well turbine.

Reference point—Center of gauge, 6 inches above ground up to and including December 3, 1930, then concrete foundation.

Elevation of reference point—250.5 up to and including December 3, 1930 then 250.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—Unknown

Tibbetts & Kieffer Well No. 599—About one-half mile south. Elev. of R. P., 226.11.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 599		**6-H-No. 76**		**6-H-No. 76**	
1920—		1930—		1932—	
Sept. 11	144 4	Jan. 22	153 0	Jan. 28	212 9
Oct 4	145 4	Dec. 3	[a]247.6	Feb. 11	212.1
Oct. 20	105 0			Feb. 25	213.3
Nov. 2	133 2	1931—		Mar. 18	214 9
Nov. 22	133.0	Mar. 9	202.4	Dec. 1	200.9
Dec. 3	133.4	Dec. 2	215.8		
Dec. 17	133.0			1933—	
				Mar. 23	214.2
1921—					
Jan. 15	139.5				
Feb. 11	138.0				

[a] Doubtful.

6-H-No. 77, LEROY ANDERSON

Location and description—500 feet west of Saratoga Avenue and 750 feet south of prolongation of Payne Avenue. Deep well turbine.

Reference point—Rim of hole in flange at ground level.

Elevation of reference point—213.02 by T. and K.

Use—Domestic and irrigation.

Depth—240 feet.

Tibbetts & Kieffer Well No. 590—Identical. Elev. of R. P., 213.02.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 590		**6-H-No. 77**		**6-H-No. 77**	
1920—		1930—		1932—	
Sept. 17	132 5	Jan. 16	177.8	Jan. 28	199.5
Oct. 4	133.4	Mar. 28	177.7	Feb. 11	199 5
Nov. 1	[a]143.9	Oct. 19	203 0	Feb. 25	199 1
Nov. 22	134.3	Dec. 3	195.0	Mar. 18	197 9
Dec. 3	134 0			Nov. 13	199.8
Dec. 17	133 8	1931—		Dec. 1	199.6
		Mar. 9	186.7		
1921—		Sept. 16	198.8	1933—	
Jan. 15	133 2	Nov. 5	200.4	Mar. 23	207.5
Feb. 11	132.2	Dec. 2	200.1		

[a] Doubtful.

6-H-No. 78, J. KURASAKI

Location and description—80 feet north of Doyle Road and three-quarter mile west of Saratoga Avenue. Deep well turbine.

Reference point—Rim of hole in flange of head.

Elevation of reference point—211.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—447 feet.

Tibbetts & Kieffer Well No. 590—About one-half mile southeast. See 6-H-No. 77.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Jan. 25	171 0	Mar. 9	187.3	Mar. 18	195 0
Dec. 3	188 2	Dec. 2	201.9	Dec. 1	204.1
				1933—	
				Mar. 23	205 8

6-H-No. 79, MARTIN BOLLINGER

Location and description—1,700 feet south of Stevens Creek Road and 0.7 mile east of Doyle Road. Deep well turbine.

Reference point—Rim of hole in flange, 1.0 foot above ground level.

Elevation of reference point—164.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—601 feet.

Tibbetts & Kieffer Well No. 576—About three-eighths mile northwest. Elev. of R. P., 151.28.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 576		T. K. No. 576		6-H-No. 79	
1920—		1921—		1930—	
Sept. 17	88.3	Jan. 14	86.7	Jan. 24	139.1
Sept. 27	90.3	Feb. 8	86.0	Dec. 15	[a]151.1
Oct. 23	92.6	Feb. 25	85.0	Dec. 24	149.7
Nov. 1	97.9				
Nov. 18	95.4	1922—		1931—	
Dec. 1	95.9	Feb. 13	86.5	Mar. 16	148.8
Dec. 14	94.9			Dec. 15	163.1
				1932—	
				Mar. 24	160.9
				Dec. 2	162.2
				1933—	
				Mar. 30	161.9

[a] Pumping.

6-G-No. 80, J. E. WIESENDANGER

Location and description—200 feet east of Saratoga Avenue and one-half mile south of Stevens Creek Road. Open casing.

Reference point—Top of casing 1.0 foot below ground level.

Elevation of reference point—148.0, Aneroid by Division of Water Resources.

Use—Abandoned.

Depth—Unknown.

Tibbetts & Kieffer Well No. 583—About three-eighths mile southwest. Elev. of R. P., 162.80.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 583		6-G-No. 80		6-G-No. 80	
1920—		1930—		1932—	
Sept. 17	97.0	Jan. 22	125.9	Mar. 18	135.3
Oct. 1	98.1	Mar. 18	122.3	Dec. 1	148.9
Oct. 21	98.2	Dec. 3	[a]168.2		
Nov. 3	99.0	Dec. 14	139.8	1933—	
Nov. 22	99.8	Dec. 26	134.5	Mar. 22	143.4
Dec. 3	98.9				
Dec. 16	98.3	1931—			
		Mar. 9	131.2		
1921—		April 21	161.4		
Jan. 14	95.3	May 7	159.0		
Feb. 8	96.3	Sept. 16	157.5		
Feb. 25	95.0	Nov. 5	156.7		
		Dec. 2	149.9		
1922—					
Feb. 17	95.0				

[a] Pumping.

6-G-No. 81, A. ZAREVICH

Location and description—50 feet north of Stevens Creek Road and 150 feet east of Saratoga Avenue. Deep well turbine.

Reference point—Rim of hole in flange.

Elevation of reference point—130 0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 644—About five-eighths mile southeast. See 7-G-No. 93. U. S. G. S. Well No. 1235—same location. Elev. of R. P., 130.0.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
U. S. G. S. 1235		**6-G-No. 81**		**6-G-No. 81**	
1914—		1930		1932—	
April 20	35 1	Jan. 24	108 9	Mar. 19	118 1
		Dec. 15	118 1	Dec. 13	129 5
		1931—		1933—	
		Mar. 10	115.7	April 5	123.7
		Sept. 24	133.2		
		Nov. 5	135.1		
		Dec. 15	129.7		

6-F-No. 82, CITY OF SANTA CLARA

Location and description—175 feet southwest of Southern Pacific Railroad right-of-way and 80 feet north of Brokaw Road. Open casing for test well.

Reference point—Top of casing at ground level.

Elevation of reference point—71.0, Aneroid by Division of Water Resources.

Use—Test well.

Depth—320 feet.

Tibbetts & Kieffer Well No. 1052—In same location. Elev. of R. P., 72.99.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1052		**6-F-No. 82**		**6-F-No. 82**	
1920—		1930—		1932—	
Sept. 15	[a]32 5	Feb. 7	51.7	Mar. 26	61 1
Oct. 14	21 8	June 20	82 4	Dec. 5	71 8
Oct. 21	21.7	Dec. 20	61 5		
Nov. 3	22 1			1933—	
Nov. 19	21 7	1931—		April 3	65 6
Dec. 2	20 6	Mar. 19	57 8		
Dec. 16	20 0	June 29	95 2		
		Sept. 24	89 8		
1922—		Nov. 5	84 9		
May 18	30 0	Dec. 14	73.2		

[a] Pumping.

6-E-No. 83, J. W. FORWARD

Location and description—200 feet northwest of Brokaw Road and 0.35 mile southwest of Guadalupe Creek Bridge. Deep well turbine.

Reference point—Rim of hole in flange, 6 inches above ground level.

Elevation of reference point—56.0, Aneroid by Division of Water Resources.

Use—Domestic, dairy and irrigation.

Depth—260 feet.

Tibbetts & Kieffer Well No. 1053—About one-eighth mile south. Elev. of R. P., 52.31.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1053		**T. K. No. 1053**		**6-E-No. 83**	
1920—		1921—		1930—	
Sept. 21	9 4	Jan. 12	(a)	Mar. 12	25 6
Oct. 14	3 8	Feb. 13	(a)	Dec. 20	37 6
Oct. 21	3.3	May 17	(b)	1931—	
Nov. 4	2 2			Mar. 19	34 8
Nov. 19	1 8			Dec. 14	49 1
Dec. 2	2 0			1932—	
Dec. 16	2 3			Mar. 26	40 5
				Dec. 5	48 1
				1933—	
				April 3	41 7

[a] Flowing.
[b] Capped.

7-E-No. 84, JOHN MACHADO

Location and description—50 feet northwest of Brokaw Road and 0.55 miles northeast from San Jose-Alviso Road. Deep well turbine.

Reference point—Top of casing 1.0 foot above ground.

Elevation of reference point—54 5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1043—About five-eighths mile southwest. Elev. of R. P., 48.91.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1043		**T. K. No. 1043**		**7-E-No. 84**	
1920—		1921—		1930—	
Oct. 5	10 4	Jan. 5	5 5	Mar. 12	23 6
Oct. 22	6 9	Feb. 4	3 2	Dec. 20	37 0
Nov. 1	6 3	Feb. 23	3 9	1931—	
Nov. 18	[a]8 7	1922—		April 18	69 9
Dec. 3	6.7	May 17	5 0	Dec. 14	46 8
Dec. 16	6 2	1923—		1932—	
		Aug. 24	6 8	Mar. 26	39 6
				Dec. 5	47 1
				1933—	
				April 3	39 7

[a] Pumping.

7-D-No. 85, CHAS. BERG

Location and description—40 feet north of Wayne Avenue (Wayne Station on Southern Pacific Railroad) and 525 feet east of Oakland Highway. Deep well turbine.

Reference point—Center of guage 6 inches above concrete foundation.

Elevation of reference point—59.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 831—About one and one-quarter mile northwest. See 6-D-No. 68.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Mar. 11	30 9	Mar. 19	38 9	Mar. 29	39 8
Dec. 20	46 2	Dec. 9	49.8	Dec. 6	50.1
				1933—	
				April 4	45 2

7-D-No. 86, JOE BRONK

Location and description—300 feet west of Capitol Avenue and 175 feet north of intersection with Milpitas Lane (Cropley Avenue) "Bean" pump.

Reference point—Top of 8" x 8" timbers clamping pump column, 10 inches above ground up to and including March 11, 1930, then top of concrete.

Elevation of reference point—71.0 up to and including March 11, 1930, then 70.2, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—300 feet.

Tibbetts & Kieffer Well No. 947—About 25 feet south. Elev. of R. P., 72.30.

U. S. G. S. Well No. 1966—Is 8 feet west. Elev. of R. P., 70.2.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
U. S. G. S. 1966		T. K. No. 947		7-D-No. 86	
1915		1920—		1930—	
May 14	1 0	Oct. 16	26 0	Mar. 11	52 9
		Oct. 23	25 5	Dec. 20	65 6
		Nov. 2	24 5		
		Nov. 18	23 0	1931—	
		Dec. 3	22 0	Mar. 19	60 9
		Dec. 16	21 0	Dec. 14	75 3
		1921—		1932—	
		Jan. 10	20 1	Mar. 28	64 8
		Feb. 4	18 0	Dec. 5	75 6
		Feb. 23	16 0		
		1922—		1933—	
		May 17	[a]44 5	April 4	69 7
		1923—			
		Aug. 30	[b]37.3		

[a] May have been pumped recently.
[b] Pumped in forenoon.

7-I-No. 87, F. E. MITCHELL

Location and description—0.5 miles west of Quito Road and 485 feet south of prolongation of the center line of McCoy Avenue. Deep well turbine.

Reference point—Rim of hole in flange at ground level.

Elevation of reference point—317.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—450 feet.

Tibbetts & Kieffer Well No. 616—About three-eighths mile east. Elev. of R. P., 297.10.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 616		**7-I-No. 87**			
1920—		1930—			
Sept. 11	121.0	Mar. 19	115.3		
Oct. 14	110.7	Dec. 3	122.1		
Oct. 23	115.4				
Nov. 2	121.7	1931—			
Nov. 22	121.9	May 12	[a]146.0		
Dec. 3	122.3	Dec. 2	(b)		
Dec. 17	121.0				
1921—					
Jan. 15	116.5				
Feb. 12	111.8				

[a] Has pumped continuously since February.
[b] No access to well.

7-H-No. 88, MRS. E. FELLOWS (QUITO RANCH)

Location and description—130 feet east of Saratoga Avenue opposite end of Prospect Road. Deep well turbine.

Reference point—Rim of hole in flange.

Elevation of reference point—251.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—1,001 feet.

Tibbetts & Kieffer Well No. 599—About 1,800 feet west. See 6-H-No. 76.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Jan. 22	193.5	Mar. 9	194.8	Mar. 18	210.1
Dec. 3	204.5	Dec. 2	223.6	Dec. 1	209.2
				1933—	
				Mar. 23	212.5

7-H-No. 89, MRS. ED. FELLOWS (QUITO RANCH)

Location and description—200 feet east of Saratoga Avenue, 50 feet north of private drive, 875 feet north of Graves Avenue. Deep well turbine.

Reference point—Rim of hole in flange.

Elevation of reference point—229.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—1,045 feet.

Tibbetts & Kieffer Well No. 590—About one-quarter mile south. See 6-H-No. 77.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Jan. 22	191.7	Mar. 9	197.1	Mar. 18	202.5
Dec. 3	202.5	Dec. 2	216.9	Dec. 1	213.8
				1933—	
				Mar. 23	212.1

7-H-No. 90, J. F. PAYNE ESTATE

Location and description—2,060 feet south of Payne Avenue and 0.6 miles east of San Tomas-Aquino Road. Deep we turbine.

Reference point—Rim of hole in flange at ground level.

Elevation of reference point—187.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—300 feet.

Tibbetts & Kieffer Well No. 593—About three-eighths mile northerly. Elev. of R. P., 178.9.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 593		T. K. No. 593		7-H-No. 90	
1920—		1921—		1930—	
Sept. 11	126 0	Jan. 15	109 4	Jan. 22	161 2
Oct. 14	112 9	Feb. 1	103 0	Mar. 28	158 4
Oct. 21	112 6			Dec. 3	[a]185 8
Nov. 3	120 7	1922—		Dec. 14	166 9
Nov. 27	119 0	Feb. 17	103 5		
Dec. 3	119 2			1931—	
Dec. 17	118 8			Mar. 19	166 6
				Dec. 2	191 8
				1932—	
				Mar. 18	164 9
				Dec. 1	181 9
				1933—	
				Mar. 23	182 3

[a] Pumping.

7-H-No. 91, A. ANDERSON

Location and description—175 feet north of Williams Road, 700 feet east of intersection with Saratoga Avenue. Deep well turbine.

Reference point—Rim of hole in flange at ground level.

Elevation of reference point—169.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—342 feet.

Tibbetts & Kieffer Well No. 383—About one-quarter mile northwest. See 6-G-No. 80.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Mar. 18	140.2	Mar. 25	160.1	Mar. 18	161.6
Dec. 3	160.5	Dec. 2	175.7	Dec. 1	174.1
				1933—	
				Mar. 23	177.5

7-G-No. 92, EMMA BARRE

Location and description—60 feet north of Stevens Creek Road and 800 feet east of Cypress Avenue. Deep well turbine.

Reference point—Lower surface of flange of pump head. 1.0 foot above ground level.

Elevation of reference point—127.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 648—About one-eighth mile east. Elev. of R. P., 129.19.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 648		T. K. No. 648		7-G-No. 92	
1920—		1921—		1930—	
Sept. 11	77.0	Jan. 14	67.3	Feb. 7	105.9
Oct. 15	76.2	Feb. 8	63.6	Dec. 15	115.3
Oct. 21	74.5	Feb. 25	61.2		
Nov. 3	76.0			1931—	
Nov. 22	75.4			Mar. 10	110.7
Dec. 3	75.1			June 19	140.7
Dec. 16	75.6			Dec. 15	125.6
				1932—	
				Mar. 19	113.5
				Dec. 13	127.3
				1933—	
				April 5	118.5

7-G-No. 93, V. T. McCURDY

Location and description—450 feet east of Santa Clara-Los Gatos Road (Winchester Road) and 2,100 feet south of Stevens Creek Road. Deep well turbine.

Reference point—Flange of pump head.

Elevation of reference point—142.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 644—About one-half mile west. Elev. of R. P., 139.10.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 644		**7-G-No. 93**		**7-G-No. 93**	
1920—		1930—		1933—	
Sept. 11	84 0	Jan. 27	114 0	April 5	125 5
Oct. 15	84 4	Dec. 22	123 4		
Oct. 21	84 6				
Nov. 22	85 0	1931—			
Dec. 3	84 9	Mar. 10	117 2		
Dec. 16	84 2	Dec. 15	134 7		
1921—		1932—			
Jan. 14	76 3	Mar. 19	119 5		
Feb. 8	72 2	Dec. 13	132 2		
Feb. 25	69 0				

7-G-No. 94, P. TALIA

Location and description—50 feet east of Santa Clara-Los Gatos Road and 750 feet north of Prune Ridge Avenue. Deep well turbine.

Reference point—Top of 12" x 12" timbers supporting pump head, 1.0 foot above ground.

Elevation of reference point—116.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1081—About 200 feet south. Elev. of R. P., 113.80.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1081		**7-G-No. 94**		**7-G-No. 94**	
1920—		1930—		1933—	
Sept. 13	58 0	Feb. 7	94 9	April 5	106 1
Oct. 14	59 0	Dec. 15	103 2		
Nov. 22	57 9				
Dec. 3	59 0	1931—			
Dec. 16	59 5	Mar. 10	99 5		
		Sept. 24	122 6		
1921—		Nov. 5	124 8		
Jan. 14	54 0	Dec. 14	114 6		
Feb. 9	51 2				
Feb. 25	49 0	1932—			
		Mar. 19	102 8		
1923—		Dec. 13	117 9		
Aug. 30	54 5				

7-G-No. 95, JOE CONNER

Location and description—2,400 feet east of Santa Clara-Los Gatos Road and 300 feet south of prolongation of Prune Ridge Avenue. Deep well turbine in pit.

Reference point—Top of casing in pit 28.7 feet below top of I-beams.

Elevation of reference point—90.3, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—300 feet.

Tibbetts & Kieffer Well No. 1089—About three-eighths mile southeast. Elev. of R. P., 126.61.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1089		**T. K. No. 1089**		**7-G-No. 95**	
1920—		1921—		1930—	
Sept. 13	71.0	Jan. 14	65.5	Feb. 7	67.2
Oct. 12	74.2	Feb. 9	62.6	Dec. 15	76.5
Oct. 25	74.8	Feb. 25	60.4		
Nov. 4	71.4			1931—	
Nov. 22	72.0	1923—		Mar. 9	73.9
Dec. 3	72.5	Aug. 30	63.8	Dec. 14	(a)
Dec. 16	72.1				

[a] Pit filled in—no access.

7-G-No. 96, V. T. McCURDY

Location and description—1,100 feet west of Bascome Avenue and 0.4 miles north of Stevens Creek Road. Deep well turbine.

Reference point—Top of flange of pump head, near ground level.

Elevation of reference point—122.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1089—About one-quarter mile south. See 7-G-No. 95.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 7	101.9	Mar. 9	105.5	Mar. 19	109.4
Dec. 22	112.1	Dec. 14	123.1	Dec. 13	128.1
				1933—	
				April 5	113.8

7-E-No. 97, H. T. HILL

Location and description—100 feet northwest of Gish Road and 400 feet northeast of San Jose-Alviso Road. Deep well turbine.

Reference point—Rim of hole in flange, 6 inches above ground.

Elevation of reference point—60.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—273 feet.

Tibbetts & Kieffer Well No. 1068—About 300 feet southwest. Elev. of R. P., 67.16.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1068		**7-E-No. 97**		**7-E-No. 97**	
1920—		1930—		1933—	
Sept. 15	20.0	Mar. 12	26.7	April 3	38.8
Oct. 5	15.0	Dec. 20	34.0		
Oct. 22	10.5				
Nov. 1	10.3	1931—			
Nov. 18	7.0	Mar. 19	33.1		
Dec. 2	5.6	Sept. 19	41.7		
Dec. 16	4.3	Nov. 6	41.1		
		Dec. 14	40.0		
1921—					
Jan. 5	2.6	1932—			
Feb. 5	(a)	Mar. 26	34.3		
		Dec. 5	40.1		

[a] Capped.

7-D-No. 98, S. R. ARAKI

Location and description—50 feet north of Hostetter Road and 0.7 miles west of Capitol Avenue (about one-half mile east of Lundy). Deep well turbine.

Reference point—Rim of hole in flange of pump head at ground level.

Elevation of reference point—94.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 936—About one-quarter mile east. Elev. of R. P., 82.26.

Remarks—Nearest log T. K. No. 935. Note the peculiar action of this well during the year 1931; readings were clear and reliable.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 936		**T. K. No. 936**		**7-D-No. 98**	
1920—		1921—		1930—	
Sept. 16	33.1	Jan. 10	26.7	Mar. 11	70.1
Oct. 15	30.1	Feb. 4	25.1	Dec. 20	81.9
Oct. 23	29.9	Feb. 23	23.0		
Nov. 1	29.6			1931—	
Nov. 18	28.6	1923—		Mar. 19	76.3
Dec. 2	28.2	Aug. 30	31.0	June 29	124.3
Dec. 16	28.7			Sept. 19	112.8
				Nov. 6	107.7
				Dec. 14	96.9
				1932—	
				Mar. 29	84.4
				Dec. 6	95.5
				1933—	
				April 4	85.2

7-C-No. 99, J. F. CAPRAL

Location and description—275 feet east of Morrill Road and 300 feet south of Milpitas Lane (Cropley Avenue). Deep well turbine.

Reference point—Rim of hole in flange, 18 inches above ground level.

Elevation of reference point—110.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—308 feet.

Tibbetts & Kieffer Well No. 884—About one-quarter mile northwest. Elev. of R. P., 100.1.

U. S. G. S. Well No. 1994—Identical. Elev. of R. P., 108.5.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
U. S. G. S. 1994		**T. K. No. 884**		**7-C-No. 99**	
1915—		1920—		1930—	
May 14	40.0	Sept. 17	62.0	Mar. 11	87.6
		Oct. 8	50.7	Dec. 20	93.4
		Oct. 23	49.6		
		Nov. 2	51.3	1931—	
		Nov. 18	48.0	Mar. 19	91.1
		Dec. 3	48.0	Sept. 19	98.1
		Dec. 16	46.8	Nov. 7	101.5
				Dec. 14	97.1
		1921—			
		Jan. 10	46.0	1932—	
		Feb. 4	44.5	Mar. 28	94.4
		Feb. 23	43.5	Dec. 5	97.9
				1933—	
		1922—		April 4	96.2
		Feb. 22	44.5		
		May 18	[a]50.8		

[a] Pumped during a.m.

7-I-No. 100, A. O. LEFEVRE

Location and description—2,025 feet north of Pollard Avenue and 315 feet east of Moore Avenue. Deep well turbine.

Reference point—Rim of hole in flange at ground level.

Elevation of reference point—262.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—586 feet.

Tibbetts & Kieffer Well No. 613—About three-eighths mile north. Elev. of R. P., 256.15.

Remarks—Nearest log T. K. No. 621.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 613		**T. K. No. 613**		**7-I-No. 100**	
1920—		1921—		1930—	
Sept. 11	96.5	Jan. 15	99.2	April 14	[a]71.2
Oct. 1	98.7	Feb. 12	96.7	Dec. 3	([b])
Oct. 14	98.7				
Oct. 23	102.3				
Nov. 2	100.7				
Nov. 22	99.5				
Dec. 17	98.4				

[a] Doubtful.
[b] Conditions not favorable for measurements; Well 7-I-No. 100A substituted.

7-I-No. 100A, A. O. LEFEVRE

Location and description—100 feet due west of 7-I-No. 100. Open casing.

Reference point—Top of casing at ground level.

Elevation of reference point—263.0, Aneroid by Division of Water Resources.

Use—None.

Depth—230 feet.

Remarks—Substituted for well 7-I-No. 100.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Dec. 3	133 0	Mar. 9	148 2	Mar. 18	*142 2
		Dec. 2	169.1	Dec. 1	109 9
				1933—	
				Mar. 23	101.9

* Checked and found correct.

7-I-No. 101, J. B. COLLINS

Location and description—50 feet north of McCoy Avenue and 0.5 miles east of Quito Road. Deep well turbine.

Reference point—Center of gauge 6 inches above concrete foundation.

Elevation of reference point—256.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 613—About one-eighth mile southwest. See 7-I-No. 100.

Remarks—Nearest log T. K. No. 602.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Mar. 19	175.5	Mar. 9	188 7	Mar. 18	183.6
Dec. 3	186.9	June 29	203 7	Dec. 1	189.5
		Dec. 2	197 5	1933—	
				Mar. 23	187.1

7-H-No. 102, JOE BARBANO

Location and description—720 feet south of Latimer Avenue and 0.5 miles east of San Tomas-Aquino Road. Deep well turbine.

Reference point—Top surface of concrete foundation for motor.

Elevation of reference point—203.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—450 feet.

Tibbetts & Kieffer Well No. 596—About three-eighths mile northwest. Elev. of R. P., 213.18.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 596		**7-H-No. 102**		**7-H-No. 102**	
1920—		1930—		1933—	
Sept. 11	126.0	Jan. 22	174.9	April 5	182.7
Oct. 15	122.1	Dec. 4	185.2		
Nov. 3	132.0				
Nov. 22	135.0	1931—			
Dec. 3	134.6	Mar. 10	176.6		
Dec. 17	134.0	Dec. 2	199.8		
1921—		1932—			
Jan. 15	137.5	Mar. 19	176.7		
Feb. 11	129.3	Dec. 13	187.2		

7-H-No. 103, J. B. WILLIAMS

Location and description—850 feet east of Santa Clara-Los Gatos Road and 0.25 miles north of Hamilton Avenue. Deep well turbine.

Reference point—Lower edge of measuring hole in side of head, 3 inches above concrete.

Elevation of reference point—172.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—636 feet.

Tibbetts & Kieffer Well No. 1108—About one-quarter mile northwest. Elev. of R. P. 174.54.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1108		**T. K. No. 1108**		**7-H-No. 103**	
1920—		1921—		1930—	
Sept. 13	120.0	Jan. 19	105.0	Jan. 27	160.1
Oct. 13	115.9	Feb. 11	96.6	Dec. 22	168.9
Oct. 21	103.7				
Nov. 5	[a]84.0	1922—		1931—	
Nov. 27	108.7	Feb. 17	87.7	Mar. 10	161.7
Dec. 4	113.2			Dec. 3	182.0
Dec. 22	110.8				
				1932—	
				Mar. 19	158.2
				Dec. 13	176.3
				1933—	
				April 5	170.1

[a] Doubtful.

7-G-No. 104, E. B. THRIFT

Location and description—750 feet east of Santa Clara-Los Gatos Road and 170 feet south of Oregon Avenue (Williams Road produced). Deep well turbine.

Reference point—Rim of hole in flange near ground level.

Elevation of reference point—163.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—260 feet.

Tibbetts & Kieffer Well No. 1104—About 150 feet east. Elev. of R. P., 164.36. U. S. G. S. Well No. 1283—Same location as 7-G-No. 104.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
U. S. G. S. 1283		**T. K. No. 1104**		**7-G-No. 104**	
1914—		1920—		1930—	
Dec. 24	52.5	Sept. 11	108.0	Jan. 27	142.7
		Oct. 13	107.7	Dec. 22	150.6
		Oct. 21	106.9		
		Nov. 5	109.0	1931—	
		Nov. 22	109.0	Mar. 1	146.0
		Dec. 6	109.5	Dec. 15	166.7
		Dec. 22	102.4		
				1932—	
		1921—		Mar. 19	147.1
		Jan. 19	98.7	Dec. 13	154.8
		Feb. 10	92.0		
				1933—	
				April 5	154.1

8-G-No. 105, DI FIORE

Location and description—580 feet south of Fruitdale (Fruitvale) Avenue and 750 feet east of San Jose-Los Gatos Road. Deep well turbine.

Reference point—Rim of hole in flange, 2.0 feet above ground level.

Elevation of reference point—161.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1129—About three-eighths mile southeast. Elev. of R. P., 149.61.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1129		**T. K. No. 1129**		**8-G-No. 105**	
1920—		1921—		1930—	
Oct. 11	92.7	Jan. 19	85.0	Feb. 4	137.1
Oct. 13	92.7	Feb. 9	80.5	Dec. 22	146.1
Oct. 25	92.4	Feb. 26	75.0		
Nov. 5	92.9			1931—	
Nov. 26	93.7			Mar. 25	142.2
Dec. 6	94.0			Dec. 3	162.3
Dec. 22	88.2				
				1932—	
				Mar. 19	142.2
				Dec. 13	157.1
				1933—	
				April 5	150.7

7-G-No. 106, DI SALVO

Location and description—30 feet north of Moorpark Avenue and 500 feet east of San Jose-Los Gatos Road. Deep well turbine in pit.

Reference point—Top of 9-inch casing in northwest corner of pit, 72.0 feet below 3 notches in 2'' x 6'' timber at top of pit.

Elevation of reference point—72.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1129—About one-quarter mile southwest. See 8-G-No. 105.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 4	42.3	Mar. 10	48.9	Mar. 19	52.3
Dec. 22	53.9	Dec. 3	63.8	Dec. 13	65.7
				1933—	
				April 5	57.4

7-G-No. 107, SAN JOSE WATER COMPANY

Location and description—75.0 feet north of Stevens Creek Road and 50 feet east of Baseome Avenue, Well No. 2, Los Coches Station.

Reference point—Center of gauge 7.0 feet above ground level.

Elevation of reference point—128.0, Aneroid by Division of Water Resources.

Use—Municipal.

Depth—240 feet.

Tibbetts & Kieffer Well No. 1139—Same location. Elev. of R. P., 127.00.

Remarks—Log available.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1139		**7-G-No. 107**		**7-G-No. 107**	
1920—		1930—		1933—	
Aug. 1	75.0	Jan. 20	107.0	April 5	119.9
Sept. 1	75.5	Dec. 1	116.0		
Oct. 1	74.0				
Nov. 1	71.0	1931—			
Dec. 1	70.0	April 16	128.0		
Dec. 31	63.5	Dec. 9	129.6		
1921—		1932—			
Feb. 1	58.0	Mar. 30	114.1		
		Dec. 16	126.1		

8-F-No. 108 SAN JOSE WATER COMPANY

Location and description—200 feet east of Buena Vista Avenue and 1,000 feet south of Stevens Creek Road, Buena Vista Station, Wells A, B, C and D.

Reference point—Concrete floor at ground level.

Elevation of reference point—128.0, Aneroid by Division of Water Resources.

Use—Test well.

Depth—200 feet.

Tibbetts & Kieffer Well No. 1135—Same location. T. and K. Elev. of R. P., 122.00. Reason for discrepency not known.

Remarks—Wells A, B, C and D are all in a pit 12 feet in diameter—log available. Distances to water furnished by water Company.

Date	Dist. R. P. to water surface, feet
T. K. No. 1135	
1920—	
Aug. 1	70 2
Sept. 1	70 5
Oct. 1	70 8
Nov. 1	70 3
Dec. 1	68 8
Dec. 31	66 4
1921—	
Feb. 1	59 0
Mar. 1	53 0
Nov. 1	64 5
1922—	
Mar. 1	60 0
Nov. 1	65 2
1923—	
Mar. 1	53 5
Nov. 1	64 0
1924—	
Mar. 1	63 3
Nov. 1	79 3
T. K. No. 1135	
1925—	
Mar. 1	71 0
Nov. 1	94 2
1926—	
Mar. 1	84 2
Nov. 1	91 7
1927—	
Mar. 1	78 7
Nov. 1	88 5
1928—	
Mar. 1	82 2
Nov. 1	95 8
1929—	
Mar. 1	90 0
Nov. 1	114 7
1930—	
Mar. 1	103 8
8-F-No. 108	
1930—	
Jan. 20	103 8
Dec. 1	111.8
1931—	
Mar. 11	108 0
June 1	123 0
June 28	[a]Dry
Dec. 14	[a]Dry
1932—	
Mar. 1	115 3
Nov. 30	125 0
1933—	
[a]Mar. 1	116 0

[a] Probably the effect of pumping from other wells in same pit.

7-F-No. 109, SAN JOSE WATER COMPANY

ocation and description—175 feet south of Emory Street and 160 feet east of Spring Street, Spring and Emory Station Well No. 1. Deep well turbine.

Reference point—Floor nf pump house. Top of casing.

Elevation of reference point—71.5, Aneroid by Division of Water Resources.

Use—Municipal.

Depth—803 feet.

Tibbetts & Kieffer Well No. 1143—About 3 blocks north and 1 block west. Elev. of R. P., 77.51.

Remarks—Records furnished by water company.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1143		**T. K. No. 1143**		**7-F-No. 109**	
1920—		1921—		1930—	
Sept. 15	23.0	Jan. 10	17.6	Jan. 20	48.2
Oct. 12	22.6	Feb. 5	14.2	Dec. 1	58.7
Oct. 26	21.8	Feb. 24	12.2		
Nov. 4	22.7			1931—	
Nov. 19	22.5	1922—		Mar. 1	50.5
Dec. 2	21.7	May 17	11.3	Dec. 1	71.5
Dec. 16	21.3				
				1932—	
				Mar. 1	59.0
				Nov. 30	68.5
				1933—	
				Mar. 1	59.7

7-D-No. 110, Y. & F. TAMARI

Location and description—300 feet west of Lundy Avenue and 3,000 feet north of Berryessa Road. Deep well turbine.

Reference point—Lower surface of flange of pump head at ground level.

Elevation of reference point—82.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 986—Same location. Elev. of R. P., 88.95.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 986		**T. K. No. 986**		**7-D-No. 110**	
1920—		1921—		1930—	
Sept. 16	31.0	Jan. 10	29.4	Mar. 11	56.7
Oct. 9	33.2	Feb. 4	27.0	Dec. 20	68.6
Oct. 23	32.7	Feb. 23	23.2		
Nov. 1	32.6			1931—	
Nov. 18	31.8	1922—		Mar. 19	63.2
Dec. 3	31.2	May 17	23.5	Dec. 9	80.0
Dec. 16	30.7				
		1923—		1932—	
		Aug. 30	29.5	Mar. 29	65.1
				Dec. 6	79.4
				1933—	
				April 4	71.9

7-D-No. 111, E. L. MOODY

Location and description—150 feet north of Berryessa Road and 700 feet west of Capitol Avenue. Deep well turbine.

Reference point—Rim of hole in flange, 18 inches above ground.

Elevation of reference point—139.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—175 feet.

Tibbetts & Kieffer Well No. 912—About one-half mile north. Elev. of R. P., 152.20. U. S. G. S. Well No. 1533—In same pit. Elev. of R. P., 138.0.

Remarks—Nearest log, T. K. No. 896.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
U. S. G. S. 1533		**T. K. No. 912**		**7-D-No. 111**	
1915—		1920—		1930—	
May 13	54 6	Sept. 16	101 0	Mar. 11	119 0
		Oct. 8	103 5	Dec. 20	131 2
		Oct. 23	101 2		
		Nov. 2	101 2	1931—	
		Nov. 18	99 7	Mar. 19	124 9
		Dec. 2	98 8	Sept. 19	147 0
		Dec. 16	98 1	Nov. 6	148 1
				Dec. 14	143 6
		1921—			
		Jan. 11	96.0	1932—	
		Feb. 4	94 6	Jan. 25	138.0
		Feb. 23	90 0	Mar. 29	121 2
				Dec. 6	142 8
				1933—	
				April 4	132 9

7-C-No. 112, ELLIS HOLMES

Location and description—550 feet northerly from Sierra Road along power line 0.2 miles west of Piedmont Road. Deep well turbine.

Reference point—Top of 3′ x 3′ steel plate supporting pump head, 1 foot above ground.

Elevation of reference point—179.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 890—About one-quarter mile east. Elev. of R. P., 205.20.

Remarks—Nearest log, T. K. No. 890.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 890		**T. K. No. 890**		**7-C-No. 112**	
1920—		1921—		1930—	
Oct. 23	153 3	Jan. 11	149 3	Mar. 11	154 8
Nov. 2	157 2	Feb. 4	146 2	Dec. 20	169 8
Nov. 19	153 5	Feb. 23	143 7		
Dec. 2	151.9			1931—	
Dec. 16	150 7			Mar. 19	161 8
				Dec. 14	180 7
				1932—	
				Mar. 28	168 8
				Dec. 6	181 1
				1933—	
				April 4	170 5

8-I-No. 113, EDWARD CARLSON

Location and description—50 feet west of Parr Avenue and 30 feet north of Parr Avenue (in southeast corner of block bounded by Parr Avenue and Southern Pacific Railroad). Deep well turbine.

Reference point—Rim of hole in flange near ground level.

Elevation of reference point—247.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—110 feet.

Tibbetts & Kieffer Well No. 628—Very near. Elev. of R. P., 248.46.

Remarks—Nearest log, T. K. No. 629.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 628		**8-I-No. 113**		**8-I-No. 113**	
1920—		1930—		1932—	
Sept. 13	83.0	Mar. 19	[b]19.9	Jan. 28	19.9
Oct. 14	81.7	Dec. 4	84.4	Feb. 11	17.8
Oct. 21	81.0			Feb. 25	16.8
Oct. 25	81.0	1931—		Mar. 18	21.9
Nov. 4	81.8	Mar. 14	65.6	Dec. 1	79.6
Nov. 23	82.4	Sept. 16	87.2		
Dec. 4	82.2	Nov. 5	88.9	1933—	
Dec. 20	[a]17.6	Dec. 2	91.1	Mar. 23	37.2
1921—					
Jan. 20	12.3				
Feb. 12	10.6				
Feb. 17	11.6				

[a] Los Gatos Creek flowing.
[b] Evidently affected by Los Gatos Creek.

8-I-No. 114, E. BENECH

Location and description—130 feet north of San Tomas Aquino Road and 100 feet west of Virginia Avenue. Old compressed air plant.

Reference point—Rim of hole in cover plate of casing at ground level.

Elevation of reference point—240.0, Aneroid by Division of Water Resources.

Use—None.

Depth—450-500 feet.

Tibbetts & Kieffer Well No. 609—Identical. Elev. of R. P., 241.09.

Remarks—Log of T. K. No. 609 available.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 609		**8-I-No. 114**		**8-I-No. 114**	
1920—		1930—		1932—	
Sept. 11	145.1	Mar. 19	[b]48.0	Jan. 28	[d]48.1
Oct. 1	148.4	Dec. 4	176.1	Feb. 11	47.6
Oct. 23	152.2			Feb. 25	46.6
Nov. 2	148.6	1931—		Mar. 18	46.8
Nov. 23	149.3	Mar. 9	[c]176.2	Dec. 1	([e])
Dec. 4	148.6	Dec. 2	196.5		
Dec. 20	[a]124.0				
1921—					
Jan. 20	126.7				
1922—					
Feb. 14	130.5				

[a] Well deepened since last measurement.
[b] Water running into well; perhaps due to Page Ditch which has been flowing several days.
[c] Effect of Page Ditch which flowed in March, 1930, but not in 1931.
[d] Effect of Page Ditch.
[e] Obstruction at 93 feet; dry at that depth.

8-H-No. 115, E. R. KENNEDY

Location and description—50 feet north of Budd Avenue and 800 feet west of Santa Clara-Los Gatos Road. Deep well turbine.

Reference point—Center of gauge, 18 inches above ground level.

Elevation of reference point—205.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1111A—About one-half mile northeast; see S-H-No. 117.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
April 14	[a]176 1	Mar. 20	[a]224 7	Jan. 28	193 4
Dec. 4	[a]215 4	Dec. 2	201 6	Feb. 11	184.2
Dec. 22	185 4			Feb. 25	170.4
				Mar. 18	148 4
				Dec. 1	190.0
				1933—	
				Mar. 23	184.2

[a] Pumping.

8-H-No. 116, CAMPBELL WATER COMPANY

Location and description—80 feet south of Rincon Avenue and 40 feet west of First Street, Campbell Well No. 2. Deep well turbine.

Reference point—Center of gauge.

Elevation of reference point—197.0, Aneroid by Division of Water Resources.

Use—Municipal and irrigation.

Depth—430 feet.

Tibbetts & Kieffer Well No. 1111A—About one-eighth mile northeast. See S-H-No. 117.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Jan. 27	178 0	Mar. 16	180 0	Mar. 19	160 0
Nov. 28	185 0	Nov. 15	206.0	Dec. 5	197.0
				1933—	
				Mar. 15	192 0

8-H-No. 117, CAMPBELL WATER COMPANY

Location and description—75 feet east of First Street, Campbell and opposite end of Everett Street. Well No. 1. Deep well turbine.

Reference point—Center of pressure gauge.

Elevation of reference point—196.0, Aneroid by Division of Water Resources.

Use—Municipal and irrigation.

Depth—430 feet.

Tibbetts & Kieffer Well No. 1111A—In same location. Elev. of R. P., 202.67.

Remarks—Log of T. K. No. 1111A available.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1111A		**T. K. No. 1111A**		**T. K. No. 1111A**	
1915—		1917—		1920—	
Jan. 31	84.0	Jan. 31	91.0	Oct. 13	131.2
Feb. 28	70.0	Feb. 28	73.0	Nov. 23	141.6
Mar. 31	66.0	Mar. 31	74.0	Dec. 4	[a]146.3
April 30	65.0	April 30	84.0	Dec. 21	130.5
May 31	67.0	July 31	98.0		
July 1	71.0	Aug. 31	102.8	1921—	
Aug. 1	79.0	Sept. 30	106.0	Jan. 19	125.0
Sept. 1	86.0				
Oct. 1	102.0	1918—		**8-H-No. 117**	
Nov. 1	107.0	Jan. 10	111.0		
Dec. 1	109.0	Mar. 31	111.0		
		May 1	117.0	1930—	
1916—		June 30	120.0	Jan. 27	175.0
Jan. 1	94.0	Oct. 31	122.0	Nov. 28	182.0
Jan. 31	66.0				
Feb. 29	62.0			1931—	
Mar. 3	61.0			Mar. 16	180.0
April 30	72.0			Nov. 15	203.0
June 1	82.0				
July 1	91.0			1932—	
Aug. 1	91.0			Mar. 19	157.0
Aug. 31	94.0			Dec. 5	194.0
Sept. 30	97.0				
Oct. 31	94.0			1933—	
Nov. 30	93.0			Mar. 15	189.0
Dec. 31	93.0				

[a] May be affected by pumping of 1131A.

8-F-No. 118, G. F. O'NEILL

Location and description—200 feet south of San Salvador Street and 300 feet west of Race Street, San Jose. Deep well turbine.

Reference point—Hole near flange, cut through concrete, 10 inches above ground.

Elevation of reference point—120.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—206 feet.

Tibbetts & Kieffer Well No. 1135—About three-eighths mile west. See 8-F-No. 108.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 4	95.1	Mar. 10	99.4	Mar. 25	([a])
Dec. 22	103.6	Dec. 3	119.0	Mar. 30	([a])
				April 10	102.3
				Dec. 6	114.8
				1933—	
				April 5	108.2

[a] Too much moisture to obtain measurement.

8-F-No. 119, SAN JOSE WATER COMPANY

Location and description—250 feet south of West Santa Clara Street, San Jose, 320 feet east of center line of Los Gatos Creek. Palm Tree Well.

Reference point—Top of gas pipe, flush with ground at east side of well curb.

Elevation of reference point—91.92 by T. & K.

Use—Test well.

Depth—840 feet.

Tibbetts & Kieffer Well No. 1245—Is identical.

Remarks—Record furnished by San Jose Water Company. Log is available.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1920—		1924—		1929—	
Aug. 1	41.4	Mar. 1	27.7	Mar. 1	53 5
Sept. 1	40.7	Nov. 1	52.2	Nov. 1	84 0
Oct. 1	39.8				
Nov. 1	34 0	1925—		1930—	
Dec. 1	29 5	Mar. 1	42.0	Jan. 20	69.0
Dec. 31	25 7	Nov. 1	57.3	Mar. 1	68 0
				Dec. 1	80.1
1921—		1926—			
Feb. 1	21.8	Mar. 1	43.0	1931—	
Mar. 1	18 0	Nov. 1	54 0	Mar. 20	74 8
Nov. 1	32 0			Dec. 1	93.0
		1927—			
1922—		Mar. 1	42.0	1932—	
Mar. 1	17.5	Nov. 1	55 0	Mar. 1	78 0
Nov. 1	29 2			Nov. 30	91 0
		1928—			
1923—		Mar. 1	42 5	1933—	
Mar. 1	18 5	Nov. 1	64 0	Mar. 1	81 0
Nov. 1	36 5				

8-E-No. 120, SAN JOSE WATER COMPANY

Location and description—100 feet east of Seventeenth Street, San Jose and 250 feet north of East Santa Clara Street, 30 feet west of Coyote Creek. Ribera del Coyote Station. Test well.

Reference point—Top of iron bar, 18 inches southeast of well.

Elevation of reference point—99.0, Aneroid by Division of Water Resources.

Use—Test well.

Depth—600 feet

Tibbetts & Kieffer Well No. 1147—Is identical.

Remarks—Wells Nos. 2 and 3 are measured by Water Company. R. P. in each case is ground level which is approximately same as R. P. for test well. Log is available. Records are furnished by San Jose Water Company.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1920—		1921—		1931—	
Aug. 1	49 0	Feb. 1	31 6	Mar. 1	76.5
Sept. 1	48 9			Dec. 1	[a]97.0
Oct. 1	45 9	1930—			
Nov. 1	41 3	Jan. 20	72.5	1932—	
Dec. 1	38.3	Dec. 1	83 0	Mar. 1	[b]83.0
Dec. 31	35 0			Nov. 30	[a]96.0
				1933—	
				Mar. 1	[a]88.0

[a] Measuring device at test well broken—measurement at Well No. 2.
[b] Measuring device at test well broken—measurement at Well No. 3.

8-D-No. 121, N. TASSI

Location and description—30 feet west of King Road and 300 feet north of Mabury Road. Deep well turbine.

Reference point—Rim of hole in flange at ground level.

Elevation of reference point—93.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1154—About one-quarter mile south. Elev. of R. P., 93.03.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1154		**T. K. No. 1154**		**8-D-No. 121**	
1920—		1921—		1930—	
Sept. 4	41 5	Jan. 10	28 4	Mar. 10	62 4
Sept. 25	44 5	Feb. 4	24 1	Dec. 20	76 6
Oct. 16	31.7	Feb. 23	21 1	1931—	
Nov. 2	32.9			Mar. 19	[b]76 2
Nov. 20	30 4	1922		Mar. 25	74 0
Dec. 3	30 0	Feb. 13	18 0	Dec. 9	87.2
Dec. 17	[a]35 8	May 17	32 0	1932—	
		1923—		Mar. 29	77 5
		Aug. 30	35.7	Dec. 6	87.1
				1933—	
				April 4	80.8

[a] Pumping.
[b] Pumping has just ceased.

8-D-No. 122, F. J. PYLE

Location and description—0.5 miles east of King Road and 200 feet south of private drive, 2,000 feet south of Mabury Road. Deep well turbine.

Reference point—Lower surface of pump head flange, at ground level.

Elevation of reference point—108.0, Aneroid by Division of Water Resources.

Use—Domestic and Irrigation.

Depth—300 feet.

Tibbetts & Kieffer Well No. 1180—About seven-eighths mile northeast. Elev. of R. P., 112.89.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1180		**T. K. No. 1180**		**8-D-No. 122**	
1920—		1921—		1930—	
Sept. 7	54.5	Jan. 11	49 5	Mar. 10	[b]72.0
Sept. 25	55.5	Feb. 4	45 0	Dec. 13	84.0
Oct. 16	54.0	Feb. 23	41.0	1931—	
Nov. 2	53.1			Mar. 19	81 7
Nov. 20	52.4	1922—		Dec. 7	94.9
Dec. 3	52.1	Feb. 13	55 0	1932—	
Dec. 17	[a]53 7	May 17	51.5	Mar. 29	85 9
		1923—		Dec. 6	96.6
		Aug. 30	63.5	1933—	
				April 4	92.3

[a] Pumping.
[b] Water stands 22 to 23 feet higher in old well 41 feet west; owner says these wells have distinctly different logs and water.

8-D-No. 123, SAM PISTURINO

Location and description—200 feet east of Capitol Avenue and 800 feet south of Mabury Road. Deep well turbine.

Reference point—Rim of hole in flange near ground level.

Elevation of reference point—142.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—200 feet.

Tibbetts & Kieffer Well No. 1186—About one-eighth mile northwest. Elev. of R. P., 148.53.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1186		**T. K. No. 1186**		**8-D-No. 123**	
1920—		1921—		1930—	
Sept. 7	89 5	Jan. 11	84 9	Mar. 10	123 7
Sept. 25	89 5	Feb. 4	80 2	Dec. 13	136 2
Oct. 16	89 2	Feb. 23	76 5		
Nov. 2	88 8			1931—	
Nov. 19	88 1			Mar. 20	130 0
Dec. 3	87 5			Dec. 9	145 9
Dec. 17	86 9				
				1932—	
				Mar. 29	133 1
				Dec. 6	[a]149 8
				1933—	
				April 4	139 2

[a] Well 8-D-No. 123 abandoned. Sealed with concrete; new well, 8 feet south, 400 feet deep, R. P. Rim of hole in flange, same elevation as old R. P.

8-D-No. 124, JAMES HANSEN

Location and description—780 feet east of Capitol Avenue and 1,530 feet south of Mabury Road. Deep well turbine.

Reference point—Rim of hole in flange at ground level.

Elevation of reference point—154.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—205 feet.

Tibbetts & Kieffer Well No. 1186—About three-eighths mile northwest. See 8-D-No. 123.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930		1931		1932—	
Mar. 10	133 0	Mar. 20	137 9	Mar. 30	146 8
Dec. 13	145 1	Dec. 9	157 1	Dec. 6	156 1
				1933—	
				April 4	147 7

8-D-No. 125, L. BARLETTA

Location and description—120 feet east of White Road and 0.35 miles north of McKee Road. Deep well turbine.

Reference point—Top of concrete supporting pump head, near ground level.

Elevation of reference point—183.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—400 feet.

Tibbetts & Kieffer Well No. 1207—About one-quarter mile southeast. Elev. of R. P., 185.57.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1207		**T. K. No. 1207**		**8-D-No. 125**	
1920—		1921—		1930—	
Sept. 8	88.5	Jan. 11	90.2	Mar. 10	123.5
Sept. 27	88.5	Feb. 5	89.9	Dec. 13	133.1
Oct. 16	88.2	Feb. 24	88.9		
Nov. 2	89.4			1931—	
Nov. 20	89.5			Mar. 20	129.8
Dec. 3	89.7			Sept. 19	[b]160.6
Dec. 17	[a]90.2			Nov. 6	[b]167.0
				Dec. 9	[b]145.6
				1932—	
				Mar. 29	136.6
				Dec. 6	141.9
				1933	
				April 4	136.9

[a] Pumping.
[b] Checked and found correct.

8-C-No. 126, MRS. FRANCES J. DIXON

Location and description—175 feet west of White Road and 275 feet south of Penetencia Road. Deep well turbine in old pit.

Reference point—Horizontal axis of discharge pipe, about ground level.

Elevation of reference point—187.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 894—About one-quarter mile northeast. Elev. of R. P., 180.88.

Remarks—Nearest log T. K. No. 1197.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 894		**T. K. No. 894**		**8-C-No. 126**	
1920—		1921—		1930—	
Sept. 8	125.0	Jan. 11	118.8	Mar. 10	162.3
Sept. 27	125.5	Feb. 23	104.2	Dec. 13	175.9
Oct. 16	[a]126.0				
Nov. 5	125.3			1931—	
Nov. 19	124.8			Mar. 20	167.9
Dec. 4	123.3			Dec. 9	[b]
Dec. 17	122.2				

[a] Pumping.
[b] Pit filled, no access to well.

8-C-No. 127, H. G. MITCHELL

Location and description—30 feet west of Toyon Avenue and 1,250 feet south of Penetencia Road. Deep well turbine.

Reference point—Rim of hole in flange near ground level.

Elevation of reference point—245.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—295 feet.

Tibbetts & Kieffer Well No. 1204—About one-quarter mile northwest. Elev. of R. P., 244.96.

Remarks—Nearest log T. K. No. 892.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1204		**T. K. No. 1204**		**8-C-No. 127**	
1920—		1921—		1930—	
Sept. 8	141 0	Jan. 11	126 5	Mar. 10	173 3
Sept. 27	144 0	Feb. 4	112 5	Dec. 13	179 8
Oct. 16	150 0	Feb. 23	110 2		
Nov. 2	149 0			1931—	
Nov. 20	146 2	1922—		Mar. 20	177 3
Dec. 4	[a]151 5	Feb. 13	118 0	Dec. 9	186 0
Dec. 17	[b]150 4				
				1932—	
				Mar. 29	173 1
				Dec. 6	178 2
				1933—	
				April 4	174 2

[a] Pumping.
[b] Had been pumping.

8-I-No. 128, T. E. PHILLIPS

Location and description—100 feet north of Lark (Walker) Avenue and 1,250 feet west of unnamed road leading south from Lark; 300 feet east of Los Gatos Creek. Centrifugal pump in pit, 34 feet deep.

Reference point—Lower surface of top flange on pump column.

Elevation of reference point—271.4 by T. & K.

Use—Domestic and irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 626—Is identical.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1920—		1921—		1931—	
Oct. 14	23 0	Jan. 21	4 8	Mar. 9	19 4
Oct. 26	23 0	Feb. 14	6 5	Sept. 16	24 6
Nov. 4	22 5			Nov. 5	23 9
Nov. 23	23 2	1922—		Dec. 3	22 3
Dec. 4	8 5	Feb. 18	6 3		
Dec. 20	6 1			1932—	
		1930—		Mar. 18	11 5
		Jan. 10	13 2	Dec. 7	22 8
		Dec. 5	24 1		
				1933—	
				Mar. 23	16 1

8-I-No. 129, NOAH ROGERS, ESTATE

Location and description—100 feet north of Los Gatos-Almaden Road and one-third mile east of intersection with San Jose-Los Gatos Road. Centrifugal pump in pit.

Reference point—Concrete floor of pump house.

Elevation of reference point—335.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—64 feet.

Tibbetts & Kieffer Well No. 1564—About one-half mile northeast. Elev. of R. P., 301.39.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1564		**T. K. No. 1564**		**8-I-No. 129**	
1920—		1921—		1930—	
Sept. 21	127.2	Jan. 21	120.0	Jan. 28	41.2
Oct. 15	124.7	Feb. 14	119.0	Dec. 5	39.1
Oct. 21	125.1				
Oct. 25	125.8	1922—		1931—	
Nov. 4	123.3	Feb. 18	106.2	Mar. 25	[a]44.9
Nov. 23	123.0			Dec. 3	48.8
Dec. 4	121.9				
Dec. 20	124.0			1932—	
				Mar. 18	32.1
				Dec. 7	39.4
				1933—	
				Mar. 24	46.6

[a] Pumping a small stream.

8-I-No. 130, WILL LESTER

Location and description—625 feet due south from railroad crossing on San Jose-Los Gatos Road, 1.3 miles southwest from Casey Road, thence due east 1,950 feet. Open casing.

Reference Point—Top of casing about ground level.

Elevation of reference point—262.5, Aneroid by Division of Water Resources.

Use—None.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1281—About five-eights mile north. See 8-H-No. 132.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Mar. 19	113.6	Mar. 9	113.1	Jan. 28	119.8
Dec. 5	113.9	Dec. 3	120.9	Feb. 11	118.9
				Feb. 25	116.0
				Mar. 18	111.2
				Dec. 7	112.9
				1933—	
				Mar. 23	111.6

9-I-No. 131, H. J. MIRASSOU

Location and description—0.25 miles west of Union (Ware) Avenue and 0.3 miles north of Colton Avenue; open casing in barn.

Reference point—Concrete floor of barn.

Elevation of reference point—257.0, Aneroid by Division of Water Resources.

Use—None.

Depth—500 feet.

Tibbetts & Kieffer Well No. 1558—About five-eighths mile east. Elevation of R. P. 228.91.

Remarks—Well abandoned on account of insufficient water.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1558		**T. K. No. 1558**		**9-I-No. 131**	
1920—		1921—		1930—	
Sept. 25	136.0	Jan. 21	128.0	Jan. 27	99.0
Oct. 12	143.2	Feb. 14	122.4	Dec. 5	116.3
Oct. 25	142.5				
Nov. 4	144.0	1922—		1931—	
Nov. 24	144.4	Feb. 18	122.5	Mar. 9	105.0
Dec. 4	143.8			Dec. 3	122.5
Dec. 20	133.9				
				1932—	
				Mar. 18	105.9
				Dec. 7	103.2
				1933—	
				Mar. 24	131.1

8-H-No. 132, W. H. GULICK

Location and description—160 feet east of Almaden Railroad and 300 feet south of San Jose-Los Gatos Road. Deep well turbine.

Reference point—Rim of hole in flange at ground level.

Elevation of reference point—231.98 by T. & K.

Use—Irrigation.

Depth—300 feet.

Tibbetts & Kieffer Well No. 1281 is identical.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1920—		1921—		1930—	
Oct. 25	159.6	Jan. 20	117.1	Mar. 19	137.6
Nov. 4	159.1	Feb. 14	110.1	Dec. 4	188.1
Nov. 24	160.0				
Dec. 4	148.5	1922—		1931—	
Dec. 21	*131.0	Feb. 17	115.5	Mar. 9	165.0
				Dec. 3	201.8
				1932—	
				Mar. 18	128.6
				Dec. 7	189.4
				1933—	
				Mar. 23	154.1

* Los Gatos Creek flowing.

8-H-No. 133. L. HIATT

Location and description—50 feet east of Union (Ware) Avenue and 1,975 feet south of intersection with San Jose-Los Gatos Road. Deep well turbine.

Reference Point—Rim of hole in flange, 6 inches above ground level.

Elevation of reference point—211.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—376 feet.

Tibbetts & Kieffer Well No. 1282 is identical. Elevation of R. P. 213.02.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1282		**8-H-No. 133**		**8-H-No. 133**	
1920—		1930—		1932—	
Nov. 5	160.7	Mar. 19	144.0	Mar. 18	140.1
Nov. 24	161.9	Dec. 5	[a]149.4	Dec. 7	145.7
Dec. 4	158.5	Dec. 26	148.1		
Dec. 24	152.7			1933—	
		1931—		Mar. 23	148.4
		Mar. 25	[a]140.0		
		Dec. 3	147.4		
1921—					
Jan. 20	143.5				
Feb. 12	134.3				

[a] Pumping.

9-H-No. 134, A. HERMLE

Location and description—825 feet north of Foxworthy Avenue and 200 feet east of the prolongation of the center line of Ross Road. Deep well turbine.

Reference Point—Concrete floor, ground level.

Elevation of reference point—192.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—420 feet.

Tibbetts & Kieffer Well No. 1556—About three-eights mile southwest. Elev. of R. P. 201.81.

Remarks—Depth of T. K. No. 1556—100.3 feet.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1556		**T. K. No. 1556**		**9-H-No. 134**	
1920—		1921—		1930—	
Sept 14	Dry	Jan. 20	Dry	Mar. 15	131.8
Oct. 12	Dry	Feb. 14	Dry	Dec. 5	161.9
Oct. 25	Dry				
Nov. 5	Dry	1922—		1931—	
Nov. 24	Dry	Feb. 18	Dry	Mar. 9	158.2
Dec. 4	Dry			Dec. 3	177.0
Dec. 21	Dry				
				1932—	
				Mar. 18	155.4
				Dec. 7	163.5
				1933—	
				April 5	162.1

8-G-No. 135, H. BOOKSIN

Location and description—100 feet north of Dry Creek Road and 0.3 miles west, along winding road from south end of Meridian Road. Deep well turbine on north bank of old Dry Creek channel.

Reference point—Rim of hole in flange about ground level.

Elevation of reference point—184.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1274—In same location. Elev. of R. P., 185.69.

U. S. G. S. Well No. 1146—Identical. Elev. of R. P., 184.0.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
U. S. G. S. 1146		**T. K. No. 1274**		**8-G-No. 135**	
1915—		1920—		1930—	
April 22	62.3	Sept. 14	105.0	Mar. 19	142.7
		Oct. 11	106.2	Dec. 22	162.0
		Oct. 26	[a]127.0		
		Nov. 5	[a]128.4	1931—	
		Dec. 6	106.7	Mar. 10	160.9
		Dec. 23	111.5	Dec. 3	185.8
		1921—		1932—	
		Jan. 20	106.2	Mar. 19	149.6
		Feb. 11	98.0	Dec. 13	180.3
				1933—	
				April 6	176.0

[a] Pumping.

9-G-No. 136, E. A. WILCOX

Location and description—500 feet southeast of Pine Avenue and 580 feet southwest of Cottle Avenue, San Jose. Deep well turbine and pit, 60.9 feet deep.

Reference point—Top of casing in pit.

Elevation of reference point—92.1, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—115 feet.

Tibbetts & Kieffer Well No. 1290—About five-eights mile southwest. Elev. of R. P., 165.76.

Remarks—Nearest log, T. K. No. 1265.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1290		**T. K. No. 1290**		**9-G-No. 136**	
1920—		1921—		1930—	
Sept. 15	100.0	Jan. 20	84.7	Mar. 15	57.8
Oct. 12	92.7	Feb. 14	77.6	Dec. 6	72.2
Oct. 26	94.1				
Nov. 5	94.9			1931—	
Nov. 26	93.2			Mar. 13	66.7
Dec. 6	92.9			Dec. 3	85.2
Dec. 23	90.9				
				1932—	
				Mar. 19	63.9
				Dec. 13	78.6
				1933—	
				Mar. 27	76.2

8-G-No. 137, W. D. WARSWICK

Location and description—250 feet south of Willow Street and 1,100 feet from Meridian Road, San Jose, on east bank of Dry Creek. Deep well turbine.

Reference point—Rim of hole in flange at ground level.

Elevation of reference point—148.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1120—About one-quarter mile northwest. Elev. of R. P., 151.99.

Remarks—Nearest log, T. K. No. 1120.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1120		**8-G-No. 137**		**8-G-No. 137**	
1920—		1930—		1932—	
Sept. 29	96.0	Mar. 15	96.9	Mar. 19	114.9
Oct. 13	89.3	Dec. 6	131.3	Dec. 16	140.1
Oct. 25	94.0				
Nov. 5	92.8	1931—		1933—	
Nov. 24	94.4	Mar. 25	[a]131.2	April 5	134.6
Dec. 6	93.8	April 16	134.1		
Dec. 22	85.1	Sept. 24	150.2		
		Nov. 5	149.2		
1921—		Dec. 3	146.2		
Jan. 18	80.1				
Feb. 10	72.4				

[a] Pumping.

8-E-No. 138, SAN JOSE WATER COMPANY

Location and description—300 feet east of Twelfth Street and 100 feet south of the prolongation of the center line of Virginia Avenue, San Jose. Well No. 4 of Santa Marta Station. Deep well turbine.

Reference point—Center of gauge, 42 inches above concrete floor.

Elevation of reference point—121.5, Aneroid by Division of Water Resources.

Use—Municipal.

Depth—800 feet.

Tibbetts & Kieffer Well No. 1244—About two blocks south and four blocks west. Elev. of R. P., 103.54.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1244		**T. K. No. 1244**		**8-E-No. 138**	
1918—		1920—		1930—	
May 18	17.8	April 4	22.5	Jan. 20	85.0
June 2	21.5	May 23	30.5	Dec. 1	94.0
June 16	24.3	Sept. 24	33.0		
July 1	22.8	Oct. 21	29.2	1931—	
July 15	23.8	Nov. 4	29.6	Mar. 1	86.0
July 29	24.8	Nov. 23	27.3	Dec. 1	111.0
Aug. 5	24.8	Dec. 6	26.8		
Aug. 12	24.8	Dec. 22	25.5	1932—	
Sept. 13	22.3			Mar. 1	94.0
Sept. 17	21.1	1921—		Nov. 30	112.0
Oct. 12	18.1	Jan. 17	23.2		
		Feb. 8	20.2	1933—	
1919—		Feb. 26	17.3	Mar. 1	98.0
Feb. 17	13.1				
Mar. 27	8.6	1922—			
May 18	20.0	May 16	20.0		
June 22	16.5				
Dec. 4	21.0	1923—			
		Aug. 30	29.9		

9-E-No. 139, F. W. OSTERMAN

Location and description—250 feet west of McLaughlin Road and 0.35 miles north of Story Road. Deep well turbine and concrete pit.

Reference point—Top of casing, 17.2 feet below ground level.

Elevation of reference point—92.78 by T. & K.

Use—Domestic and irrigation.

Depth—120 feet.

Tibbetts & Kieffer Well No. 1240—Is identical. Elev. of R. P., 109.98.

U. S. G. S. Well No. 1406—Is identical. Elev. of R. P., 109.98.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
U. S. G. S. 1406		**T. K. No. 1240**		**9-E-No. 139**	
1914—		1920—		1930—	
Jan. 28	15.3	Sept. 6	39.0	Mar. 6	52.6
Feb. 2	14.6	Sept. 25	38.0	Dec. 12	61.1
Mar. 3	9.2	Oct. 18	33.3		
April 2	7.8	Nov. 4	34.4	1931—	
May 2	9.9	Nov. 20	31.7	Feb. 13	58.8
June 4	[a]21.7	Dec. 6	30.8	Dec. 7	68.5
July 2	16.5	Dec. 27	29.2		
Aug. 2	16.8			1932—	
Sept. 2	19.3	1921—		Mar. 22	67.5
Oct. 7	17.0	Jan. 17	27.5	Dec. 9	74.7
Nov. 3	13.6	Feb. 8	24.4		
Dec. 2	12.0	Feb. 26	21.4	1933—	
				Mar. 27	71.6
1915—		1922—			
Jan. 11	10.7	May 18	28.3		
Jan. 28	9.9				
Mar. 8	5.0				
May 16	4.0				
1917—					
Jan. 4	6.7				

[a] Doubtful.

8-E-No. 140, L. ALLONO

Location and description—40 feet north of Lindrom Avenue and 800 feet east of King Road. Deep well turbine.

Reference point—Top of casing 1.0 foot above ground.

Elevation of reference point—100.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—150 feet.

Tibbetts & Kieffer Well No. 1161—About one-quarter mile northwest. Elev. of R. P., 97.64.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1161		**T. K. No. 1161**		**8-E-No. 140**	
1920—		1921—		1930—	
Sept. 4	33.0	Jan. 11	18.0	Mar. 6	61.9
Sept. 25	29.0	Feb. 5	15.1	Dec. 13	69.4
Oct. 16	23.8	Feb. 24	12.3		
Nov. 3	23.8			1931—	
Nov. 19	21.5	1922—		Mar. 14	68.4
Dec. 4	21.3	Feb. 13	12.5	Sept. 19	80.2
Dec. 17	19.7	May 17	20.6	Nov. 6	77.9
				Dec. 7	77.4
		1923—			
		Aug. 30	30.1	1932—	
				Mar. 23	76.9
				Dec. 12	82.5
				1933—	
				Mar. 29	83.1

8-D-No. 141, ENNES BROS.

Location and description—400 feet south of McKee Road and 1,450 feet west of Jackson Avenue. Deep well turbine.

Reference point—Rim of hole in flange of pump head, near ground level.

Elevation of reference point—102.0, Aneroid by Division of Water Resources.

Use—Domestic, dairy and irrigation.

Depth—340 feet.

Tibbetts & Kieffer Well No. 1161—About one-half mile southwest. See 8-E-No. 140.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Mar. 10	64.6	Mar. 19	69.3	Mar. 29	76.4
Dec. 20	73.8	Dec. 7	80.2	Dec. 6	80.6
				1933—	
				April 4	78.5

9-D-No. 142, U. BOESCH

Location and description—575 feet south of Alum Rock Avenue and 600 feet west of Capitol Avenue. Pit windmill and tank.

Reference point—Top northeast corner of well curb, at ground level.

Elevation of reference point—113.5, Aneroid by Division of Water Resources.

Use—None.

Depth—120 feet.

Tibbetts & Kieffer Well No. 1193—Same location. Elev. of R. P., 124.43.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1193		**T. K. No. 1193**		**9-D-No. 142**	
1920—		1921—		1930—	
Sept. 7	53.0	Jan. 11	51.8	Mar. 6	61.1
Sept. 25	53.5	Feb. 5	51.1	Dec. 13	63.1
Oct. 16	53.0	Feb. 24	50.5		
Nov. 3	52.9			1931—	
Nov. 19	52.4	1922—		Mar. 14	64.1
Dec. 4	52.3	May 17	51.5	Dec. 7	69.4
Dec. 17	52.0			1932—	
				Mar. 23	(a)

[a] Well abandoned, casing filled.

8-C-No. 143, HIND ORCHARD COMPANY

Location and description—550 feet north of McKee Road and 100 feet east of Kirk Avenue; produced (Pala Olive Grove). Deep well turbine.

Reference point—Top surface of concrete foundation, 6 inches above ground.

Elevation of reference point—215.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1210—Same location. Elev. of R. P., 217.28.

Remarks—Nearest log T. K. No. 1208.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1210		**T. K. No. 1210**		**8-C-No. 143**	
1920—		1921—		1930—	
Sept. 10	113 5	Jan. 11	114.9	Mar. 10	147 3
Sept. 27	114 5	Feb. 5	115.5	Dec. 13	156 6
Oct. 16	114 5	Feb. 24	114.0		
Nov. 3	116.6			1931—	
Nov. 20	114 5			Mar. 19	151 0
Dec. 4	114 6			Dec. 9	160 3
Dec. 17	114.8				
				1932—	
				Mar. 29	155 6
				Dec. 6	161 8
				1933—	
				April 4	156 8

9-I-No. 144, F. and L. DOWNING

Location and description—180 feet north of Los Gatos-Almaden Road and 350 feet west of Union Avenue, at side of Union School. Deep well turbine.

Reference point—Rim of hole in flange, near ground level.

Elevation of reference point—271, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—384 feet.

Tibbetts & Kieffer Well No. 1558—About five-eighths mile northeast. See 9-E-No. 131.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Jan. 27	97 0	Mar. 9	116 1	Mar. 18	106 4
Dec. 5	131 8	Dec. 3	128 5	Dec. 7	112 9
				1933—	
				Mar. 24	105 1

9-H-No. 145, NICK NELSON

Location and description—0.5 miles east of Union Avenue, 0.7 miles south of intersection with Foxworthy Road. Deep well turbine.

Reference point—Rim of hole for air line up to and including May 10, 1930; then top of casing at ground level.

Elevation of reference point—224.0. Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—330 feet.

Tibbetts & Kieffer Well No. 1558—About one-quarter mile west. See 9-E-No. 131.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Jan. 28	129 9	Mar. 9	128 8	Jan. 28	137.8
May 10	125 0	Dec. 3	140 6	Feb. 11	137 0
Dec. 5	128 9			Feb. 25	140.3
				Mar. 18	140 0
				Dec. 7	121.7
				1933—	
				Mar. 24	144 9

9-H-No. 146, PETE GULJERMOVICH

Location and description—30 feet east of Ross Road and 2,000 feet north of Branham Lane. Deep well turbine.

Reference point—Rim of hole in flange at ground level.

Elevation of reference point—207.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—327 feet.

Tibbetts & Kieffer Well No. 1549—About one-eighth mile south. Elev. of R. P., 206.05.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1549		9-H-No. 146		9-H-No. 146	
1920—		1930—		1932—	
Sept. 14	94.0	Jan. 28	119.0	Jan. 28	132 1
Oct. 12	[a]92.3	Dec. 5	122 0	Feb. 11	128 1
Oct. 26	92 0			Feb. 25	124 7
Nov. 6	102.3	1931—		Mar. 18	112.8
Nov. 24	100 0	Mar. 9	122.4	Dec. 7	116 6
Dec. 4	99 7	Sept. 16	132.9		
Dec. 23	95 7	Nov 5	135 8	1933—	
		Dec. 3	136 3	Mar. 24	[b]132.0
1921—					
Jan. 21	94.5				

[a] Pumping.
[b] Checked and found correct.

9-G-No. 147, UCHIYAMA BROS.

Location and description—60 feet north of Foxworthy Avenue and 600 feet west of Jarvis Road. Deep well turbine.

Reference point—Center of gauge up to and including March 10, 1931; then top of concrete 6 inches above ground.

Elevation of reference point—164.0 up to and including March 10, 1931; then 163.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—520 feet.

Tibbetts & Kieffer Well No. 1292—About one-eighth mile east. Elev. of R. P., 159.94.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1292		**9-G-No. 147**		**9-G-No. 147**	
1920—		1930—		1932—	
Sept. 14	89 0	Mar. 15	125.8	Jan. 28	128.6
Nov. 26	81.9	Dec. 5	139.9	Feb. 11	122.8
Dec. 6	81.9			Feb. 25	116 6
Dec. 23	78 6	1931—		Mar. 19	114 7
		Mar. 10	141 8	Dec. 7	128.9
1921—		Dec. 3	(a)		
Jan. 20	74 0			1933—	
Feb. 14	65.0			April 5	129 3
1922—					
Feb. 18	66 5				

[a] No access.

9-G-No. 148, A. DANNA

Location and description—150 feet northwest of Curtner Avenue and 850 feet southwest of end of Cottle Avenue. Deep well turbine.

Reference point—Rim of hole in flange at ground level.

Elevation of reference point—153.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1290—About three-eighths mile southwest. See 9-G-No. 136.

Remarks—Nearest logs, T. K. Nos. 1308 and 1309.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Mar. 15	113 4	Mar. 20	124 0	Mar. 19	117 5
Dec. 6	125.1	Sept. 24	147 8	Dec. 7	134 7
		Nov. 5	150 9		
		Dec. 8	141.7	1933—	
				April 5	134 6

9-G-No. 149, H. HANSON & SON

Location and description—450 feet east of Almaden Road from a point 500 feet northerly from Curtner Avenue Bridge. Deep well turbine.

Reference point—Top of casing, 1.0 foot above ground.

Elevation of reference point—143.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—200 feet.

Tibbetts & Kieffer Well No. 1337—Same location. Elev. of R. P., 142.78.

Remarks—Nearest log, T. K. No. 1319.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1337		**9-G-No. 149**		**9-G-No. 149**	
1920—		1930—		1933—	
Sept. 14	68.0	Mar. 15	102.6	Mar. 27	122.3
Sept. 28	70.0	Dec. 5	116.0		
Oct. 19	[a]82.8	1931—			
Nov. 5	70.4	Mar. 10	112.3		
Nov. 24	[a]77.5	Dec. 3	130.9		
Dec. 7	66.0	1932—			
Dec. 27	63.8	Mar. 19	110.6		
1921—		Dec. 7	126.8		
Jan. 18	60.7				
Feb. 10	54.2				

[a] Pumping.

9-F-No. 150, SAN JOSE WATER COMPANY

Location and description—300 feet south of Northern Road and 75 feet east of Guadalupe Creek. Los Condelejas Station.

Reference point—Top of casing, 30 inches above ground.

Elevation of reference point—130.0, Aneroid by Division of Water Resources.

Use—None.

Depth—390 feet.

Tibbetts & Kieffer Well No. 1330—About one-eighth mile north. Elev. of R. P., 129.67.

Remarks—Records furnished by water company.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1330		**T. K. No. 1330**		**9-F-No. 150**	
1920—		1921—		1930—	
Sept. 13	53.0	Jan. 18	45.4	Jan. 20	105.0
Sept. 28	53.0	Feb. 10	41.0	Dec. 1	104.5
Oct. 19	52.2				
Nov. 5	52.4	1922—		1931—	
Nov. 24	50.3	Feb. 15	34.0	Mar. 1	101.0
Dec. 7	49.4			Nov. 1	112.5
Dec. 24	48.1	1923—		Dec. 1	112.0
		Aug. 30	44.0		
				1932—	
				Mar. 1	102.0
				Mar. 30	103.5
				Nov. 30	115.0
				1933—	
				Mar. 1	110.0

9-F-No. 151, SAN JOSE WATER COMPANY

Location and description—60 feet south of Cottage Grove Avenue and 80 feet east of Pomona Avenue, San Jose, Aldea Station; "Robinson Test Well."

Reference point—Top of concrete around casing, 1.0 foot above ground.

Elevation of reference point—120.0, Aneroid by Division of Water Resources.

Use—Test well.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1359—About three-eighths mile north. Elev. of R. P., 114.57.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1359		T. K. No. 1359		9-F-No. 151	
1918—		1920—		1930—	
June 1	27.0	June 14	25.5	Jan. 20	82 0
June 25	30.5	June 26	31.5	Dec. 1	82 6
Aug. 8	32.5	Sept. 13	42.5		
		Oct. 12	40.5	1931—	
1919—		Oct. 25	38.6	April 18	87 9
Aug. 1	35 0	Nov. 4	38 9	Dec. 1	96.5
		Nov. 23	37.2		
		Dec. 7	36.4	1932—	
		Dec. 24	35 0	Jan. 28	95.5
				Feb. 11	96.4
		1921—		Feb. 25	95 9
		Jan. 17	32 4	Mar. 1	94 0
		Jan. 30	28 0	Mar. 30	93 4
		Feb. 10	29 1	Nov. 30	94 9
		Oct. 23	36 0		
				1933—	
		1922—		April 5	98 8
		May 15	28 2		
		1923—			
		Aug. 30	36.1		

9-F-No. 152, H. HOOVER

Location and description—60 feet west of Senter Road and 0.55 miles north of Tully Road. Deep well turbine and pit.

Reference point—Top of 3½′ x 3½′ steel plate on concrete, 1.0 foot above ground.

Elevation of reference point—125.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—120 feet.

Tibbetts & Kieffer Well No. 1373—Identical. Elev. of R. P., 127.47.

U. S. G. S. Well No. 1379—Identical. Elev. of R. P., 124.0.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
U. S. G. S. 1379		T. K. No. 1373		9-F-No. 152	
1915		1920		1930—	
May 24	13 3	Sept. 15	51.0	Feb. 27	85 7
		Sept. 29	50.0	Dec. 11	84.9
		Oct. 20	47.4		
		Nov. 4	47.2	1931—	
		Nov. 23	45.1	Mar. 13	(a)
		Dec. 6	44.3	Dec. 7	(a)
		Dec. 27	42.8		
				1932—	
		1921—		Jan. 28	(a)
		Jan. 17	41.0		
		Feb. 10	37.5		
		1922—			
		Feb. 22	34 0		
		1923—			
		Aug. 30	46 7		

(a) Obstruction at 90 feet; dry at that depth.

9-E-No. 153. MRS. FRANK J. KELLEY

Location and description—900 feet south of Story Road from a point 800 feet east of intersection with Senter Road. Deep well turbine in pit.

Reference point—Concrete floor of pump house, 3.9 feet above top of casing.

Elevation of reference point—130.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—183 feet.

Tibbetts & Kieffer Well No. 1243—About one-eighth mile north. Elev. of R. P., 112.67.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1243		**T. K. No. 1243**		**9-E-No. 153**	
1920—		1921—		1930—	
Sept. 15	40.0	Jan. 17	29.2	Feb. 27	88.6
Sept. 29	38.5	Feb. 9	26.0	Dec. 12	92.1
Oct. 20	35.5	1922—		1931—	
Nov. 4	36.0	Feb. 22	21.3	Mar. 13	90.4
Nov. 23	33.3	May 16	25.0	Dec. 7	103.0
Dec. 6	32.7	1923—		1932—	
Dec. 27	31.0	Aug. 30	34.0	Mar. 22	100.7
				Dec. 9	106.1
				1933—	
				Mar. 27	103.8

9-E-No. 154, W. PROVAN

Location and description—100 feet east of Roberts Avenue and 1,560 feet south of Story Road. Deep well turbine.

Reference point—Top of casing about 1.0 foot above ground.

Elevation of reference point—125.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—253 feet.

Tibbetts & Kieffer Well No. 1380—About one-eighth mile south. Elev. of R. P., 120.39.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1380		**T. K. No. 1380**		**9-E-No. 154**	
1920—		1921—		1930—	
Sept. 6	[a]51.0	Jan. 11	39.3	Feb. 27	76.1
Sept. 25	45.0	Feb. 9	32.7	Dec. 13	86.6
Oct. 18	42.0				
Nov. 4	42.0	1922—		1931—	
Nov. 22	40.0	May 15	34.1	Mar. 13	85.1
Dec. 6	39.3			April 18	87.2
Dec. 28	37.5	1923—		June 29	91.3
		Aug. 30	43.0	Sept. 17	95.2
				Nov. 6	96.2
				Dec. 7	96.0
				1932—	
				Mar. 22	94.1
				Dec. 9	100.6
				1933—	
				Mar. 27	98.1

[a] Pumping.

9-E-No. 155, W. H. WHITE

Location and description—160 feet west of Lucretia Avenue and 650 feet north of prolongation of Fair Avenue. Deep well turbine.

Reference point—Crevice at flange, 3 inches above concrete floor and 1.0 foot above ground.

Elevation of reference point—126.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—130 feet.

Tibbetts & Kieffer Well No. 1380—About one-eighth mile southwest. See 9-E-No. 154.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 27	80.0	Mar. 13	86.0	Mar. 22	95.4
Dec. 13	88.0	Dec. 7	97.6	Dec. 9	101.8
				1933—	
				Mar. 27	99.4

9-E-No. 156, W. M. PROVAN

Location and description—50 feet east of Lucretia Avenue and 300 feet north of Fair Avenue. Deep well turbine.

Reference point—Top surface of pump head flange, about 1.0 foot above ground.

Elevation of reference point—124.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—203 feet.

Tibbetts & Kieffer Well No. 1380—About one-quarter mile west. See 9-E-No. 154.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 27	79.8	Mar. 13	86.0	Mar. 22	95.1
Dec. 13	87.7	Dec. 7	97.5	Dec. 9	101.5
				1933—	
				Mar. 27	99.2

9-E-No. 157, H. MENZEL

Location and description—650 feet west of McLaughlin Road and 1,750 feet south of Story Road. Deep well turbine in pit 15 feet deep.

Reference point—Top of concrete curb around pit, ground level.

Elevation of reference point—117.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—158 feet.

Tibbetts & Kieffer Well No. 1380—About three-eighths mile southwest. See 9-E-No. 154.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 27	78.0	Mar. 13	81.5	Mar. 22	90.2
Dec. 13	82.6	Dec. 7	92.0	Dec. 9	96.2
				1933—	
				Mar. 28	94.1

9-E-No. 158, O. E. SHEPHERD

Location and description—140 feet east of McLaughlin Road and 400 feet south of Story Road. Deep well turbine.

Reference point—Rim of hole in flange, near ground level.

Elevation of reference point—113.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—140 feet.

Tibbetts & Kieffer Well No. 1240—About three-eighths mile northwest. See 9-E-No. 139.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 27	73.4	Mar. 13	77.5	Mar. 22	86.8
Dec. 13	78.9	Dec. 7	88.0	Dec. 9	92.3
				1933—	
				Mar. 28	90.3

9-E-No. 159, WILLIAM PRUSCH

Location and description—50 feet west of King Road and 550 feet north of Story Road. Deep well turbine.

Reference point—Rim of hole in flange of pumphead, near ground level.

Elevation of reference point—105.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—200 feet.

Tibbetts & Kieffer Well No. 1224—About one-eighth mile southeast. Elev. of R. P., 109.66.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1224		**T. K. No. 1224**		**9-E-No. 159**	
1920—		1921—		1930—	
Sept. 6	43.0	Jan. 11	26.3	Mar. 6	68.7
Sept. 25	36.0	Feb. 9	22.7	Dec. 13	76.4
Oct. 18	32.1	Feb. 26	20.0		
Nov. 3	32.0			1931—	
Nov. 20	[a]32.0	1922—		Mar. 14	75.1
Dec. 4	[a]31.5	Feb. 22	19.8	Sept. 19	85.2
Dec. 17	28.3	May 18	29.7	Nov. 6	84.9
				Dec. 9	84.8
		1923—			
		Aug. 30	42.3	1932—	
				Mar. 23	84.2
				Dec. 12	75.5
				1933—	
				Mar. 29	88.6

[a] Pumping.

9-D-No. 160, J. KAMPFEN

Location and description—60 feet east of Amos Lane and 2,325 feet south of Story Road. Deep well turbine.

Reference point—Rim of hole in flange of pumphead, 8 inches above ground.

Elevation of reference point—121.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—472 feet.

Tibbetts & Kieffer Well No. 1414—About 370 feet north. Elev. of R. P., 121.34.

Remarks—Log of T. K. No. 1414 available.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1414		**T. K. No. 1414**		**9-D-No. 160**	
1920—		1921—		1930—	
Sept. 10	48 5	Jan. 11	34 1	Mar. 6	73 7
Sept. 27	44 5	Feb. 9	31 6	Dec. 13	94 2
Oct. 18	40 5	Feb. 26	29 0		
Nov. 3	39 8			1931—	
Nov. 20	38 3			Mar. 14	89 8
Dec. 4	37 5			Dec. 9	107 8
Dec. 17	36 5				
				1932—	
				Mar. 23	95 3
				Dec. 12	103 9
				1933—	
				Mar. 29	100 8

9-D-No. 161, MRS. E. R. TERRY

Location and description—90 feet south of Story Road and 570 feet west of south branch of Story Road. Windmill.

Reference point—Top of casing, 15 inches above ground.

Elevation of reference point—161.5, Aneroid by Division of Water Resources.

Use—Domestic.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1213—About one-quarter mile northeast. Elev. of R. P., 181.27.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1213		**9-D-No. 161**		**9-D-No. 161**	
1920—		1930—		1933—	
Sept. 10	86 0	Feb. 28	73 4	Mar. 29	90 7
Sept. 25	87 5	Dec. 13	83 8		
Oct. 18	73 2				
Nov. 3	[a]85 2	1931—			
Nov. 20	68 6	Mar. 14	74 6		
Dec. 4	[a]87 7	Dec. 9	77 6		
Dec. 17	75 0				
		1932—			
1921—		Mar. 23	81 7		
Jan. 11	72 8	Dec. 12	83 1		
Feb. 9	69 6				
Feb. 26	[a]77 0				

[a] Pumping.
[b] Checked and found correct.

9-D-No. 162. F. BODENSHATZ

Location and description—1,500 feet south of Reed Avenue and 0.5 miles east of White Road. Deep well turbine.

Reference point—Rim of hole in flange of pumphead, 1.0 foot above ground.

Elevation of reference point—168.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—600 feet.

Tibbetts & Kieffer Well No. 1213—About one-quarter mile southeast. See 9-D-No. 161.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Mar. 6	71.0	Mar. 14	69.9	Mar. 23	72.8
Dec. 13	70.5	Dec. 9	73.3	Dec. 12	75.1
				1933—	
				Mar. 29	76.5

9-D-No. 163. CONTINENTAL PACIFIC FINANCE COMPANY

Location and description—620 feet south of Reed Avenue and 0.5 miles east of White Road. Open casing.

Reference point—Top of casing about 1.0 foot above ground.

Elevation of reference point—152.5, Aneroid by Division of Water Resources.

Use—None.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1213—Three-eighths mile southeast. See 9-D-No. 161.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—			
Mar. 6	57.3	Mar. 14	58.9		
Dec. 13	59.1	Dec. 9	(a)		

[a] Casing collapsed at 61 feet; measurements discontinued.

9-I-No. 164, J. P. THOMAS

Location and description—500 feet south of Los Gatos-Almaden Road and 0.75 miles east of Union Avenue. Open casing.

Reference point—Top of casing, 1.0 foot above ground in small depression.

Elevation of reference point—231.0, Aneroid by Division of Water Resources.

Use—None.

Depth—400 feet.

Tibbetts & Kieffer Well No. 1567—About 500 feet east. Elev. of R. P., 236.28.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1567		**9-I-No. 164**		**9-I-No. 164**	
1920—		1930—		1933—	
Sept. 21	47.8	Jan. 27	54.4	Mar. 24	48.8
Oct. 15	47.4	Dec. 5	60.1		
Oct. 26	48.0				
Nov. 4	50.3	1931—			
Nov. 24	50.0	Mar. 9	58.6		
Dec. 4	49.6	Sept. 16	62.8		
Dec. 24	48.7	Nov. 5	63.0		
		Dec. 3	62.6		
1921—					
Jan. 21	47.7	1932—			
Feb. 15	37.7	Mar. 18	28.1		
		Dec. 7	42.3		

9-H-No. 165, F. C. KRATZ

Location and description—1,050 feet north of Kooser Road and 1,700 feet west of Dent Road. Deep well turbine.

Reference point—Lower edge of measuring hole in head, 1.0 foot above ground.

Elevation of reference point—234.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1547—About three-eighths mile southwest. Elev. of R. P., 235.28.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1547		**T. K. No. 1547**		**9-H-No. 165**	
1920—		1921—		1930—	
Sept. 13	88.0	Jan. 21	71.2	Mar. 15	89.1
Oct. 15	[a]101.0	Feb. 15	58.0	Dec. 5	143.0
Oct. 26	90.9				
Nov. 8	82.4	1922—		1931—	
Nov. 26	95.0	Feb. 18	31.9	Mar. 12	145.4
Dec. 6	92.8			Sept. 16	153.7
Dec. 24	79.8			Nov. 5	[b]188.9
				Dec. 4	[c]155.6
				1932—	
				Mar. 19	99.0
				Dec. 7	135.9
				1933—	
				Mar. 25	127.1

[a] Pumping.
[b] May be the effect of 9-H-No. 166.
[c] Pumping at 9-H-No. 166 ceased several days prior to observation.

9-H-No. 166, ATHENOUR BROS.

Location and description—0.25 miles south of Branham Lane and 0.5 miles west of Jarvis Road. Deep well turbine.

Reference point—Center of gauge, 2 inches above pumphead flange.

Elevation of reference point—208.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—338 feet.

Tibbetts & Kieffer Well No. 1538—About one-half mile northwest, see 9-H-No. 167.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Jan. 23	127.0	Mar. 1	126.4	Mar. 19	97.2
Feb. 4	116.0	Mar. 12	[a]194.8	Dec. 7	121.7
Mar. 15	109.1	Sept. 16	124.1		
May 20	[a]179.2	Nov. 5	(b)	1933—	
Dec. 5	125.0	Dec. 3	142.0	Mar. 25	112.0

[a] Pumping.
[b] Pumping has been continuous for a week.

9-H-No. 167, A. C. HANSEN

Location and description—450 feet west of Jarvis Road and 100 feet north of Branham Lane. Drilled well in old pit.

Reference point—Top of concrete wall around pit, 6 inches above ground.

Elevation of reference point—181.18 by T. & K.

Use—Irrigation.

Depth—190 feet.

Tibbetts & Kieffer Well No. 1538—Identical.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1920—		1922—		1932—	
Sept. 14	76.0	Feb. 18	57.8	Jan. 28	127.2
Oct. 12	78.4			Feb. 11	115.1
Oct. 26	51.5	1930—		Feb. 25	[a]101.7
Nov. 6	[a]82.3	Jan. 8	118.4	Mar. 19	81.3
Nov. 26	81.8	Mar. 15	103.0	Dec. 7	120.2
Dec. 6	81.7	Dec. 5	118.3		
Dec. 23	80.8			1933—	
		1931—		April 5	115.2
1921—		Mar. 12	118.1		
Jan. 21	70.7	Dec. 3	149.4		
Feb. 15	58.0				

[a] Doubtful.

9-G-No. 168, F. J. GRASS

Location and description—40 feet west of Almaden Road and 75 feet north of Foxworthy Avenue. Deep well turbine.

Reference point—Rim of hole in flange.

Elevation of reference point—159.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—200 feet.

Tibbetts & Kieffer Well No. 1343—About one-eighth mile east. Elev. of R. P., 156.15.

Remarks—Nearest log T. K. No. 1311 and 1312.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1343		**9-H-No. 168**		**9-H-No. 168**	
1920—		1930—		1933—	
Sept. 14	65.0	Mar. 15	83.4	Mar. 27	112.2
Sept. 28	66.0	Dec. 5	112.8		
Oct. 19	[a]81.0				
Nov. 5	[a]83.0	1931—			
Nov. 24	68.2	Mar. 10	110.5		
Dec. 7	67.0	Dec. 3	133.6		
Dec. 28	59.0				
		1932—			
1921—		Mar. 19	69.7		
Jan. 18	48.7	Dec. 7	119.1		
Feb. 10	28.1				

[a] Pumping.

10-G-No. 169, W. E. RAWLINGS

Location and description—1,200 feet south of Hillsdale Avenue and 500 feet west of Pearl Avenue. Deep well turbine and pit.

Reference point—Top of casing 41.1 feet below pumphead flange.

Elevation of reference point—110.9, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—130 feet.

Tibbetts & Kieffer Well No. 1343—About three-eighths mile northwest. See 9-G-No. 168.

Remarks—Nearest log T. K. No. 1506.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Mar. 15	26.8	Mar. 12	54.9	Mar. 19	[a]
Dec. 6	56.6	Dec. 4	75.2	Dec. 10	54.4
				1933—	
				Mar. 25	49.2

[a] Water in pit 2.8 feet above R. P.

9-F-No. 170, OAK HILL CEMETERY

Location and description—100 feet west of Monterey Road and 800 feet south of Tully Road. Open casing.

Reference point—Top of casing, nail keg set in concrete, 1.0 foot below ground.

Elevation of reference point—135.0, Aneroid by Division of Water Resources.

Use—None.

Depth—245 feet.

Tibbetts & Kieffer Well No. 1466—Same location. Elev. R. P., 137.01.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1466		**9-F-No. 170**		**9-F-No. 170**	
1920—		1930—		1933—	
Sept. 14	54.5	Feb. 10	96.0	Mar. 27	[c]
Sept. 30	49.5	Dec. 11	104.4		
Oct. 21	52.2				
Nov. 5	51.1	1931—			
Nov. 23	49.2	Mar. 13	101.7		
Dec. 8	48.9	Dec. 5	[a]		
Dec. 30	48.5				
		1932—			
1921—		Mar. 22	109.9		
Jan. 18	47.5	Dec. 9	[b]		
Feb. 10	45.0				

[a] Casing collapsed at 115 feet; no water at that depth.
[b] No access; casing collapsed.
[c] Measurement not possible on account of obstruction.

9-F-No. 171, TREADWELL ESTATE

Location and description—75 feet north of Tully Road and 220 feet west of Senter Road. Open casing in pit.

Reference point—Top of casing 54.0 feet below concrete at pit mouth.

Elevation of reference point—77.5, Aneroid by Division of Water Resources.

Use—None.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1373—About one-half mile northwest. See 9-F-No. 152.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 11	36.6	Mar. 13	42.2	Mar. 22	51.3
Dec. 11	46.3	Dec. 7	58.2	Dec. 9	58.6
				1933—	
				April 5	57.7

9-F-No. 172, F. G. WOOL PACKING COMPANY

Location and description—300 feet north of Quinn Avenue and 1,725 feet east of Senter Road, on west bank of Coyote River. Deep well turbine.

Reference point—Lower surface of flange of pumphead.

Elevation of reference point—138.0, Aneroid by Division of Water Resources.

Use—Industrial.

Depth—202 feet.

Tibbetts & Kieffer Well No. 1368—About 500 feet west. Elev. of R. P., 138.35.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T K. No. 1368		9-F-No. 172		9-F-No. 172	
1920—		1930—		1932—	
Sept. 15	62.0	Feb. 27	101 0	Jan. 28	119.0
Sept. 29	60.5	Dec. 12	109 2	Feb 11	118 3
Oct. 20	57 8			Feb. 25	[b]119 7
Nov. 4	57.6	1931—		Mar. 25	[a]
Nov. 23	55 4	Mar. 13	107 1	Mar. 28	[a]
Dec. 6	54 4	Dec. 5	121 4	Mar. 30	119.2
Dec. 23	52.8			Dec. 9	123 3
1921—				1933—	
Jan. 17	51.1			Mar. 27	120 6
Feb. 10	47.7				
1922—					
Feb. 22	44 6				

[a] Pumping.
[b] Coyote River has ceased to flow.

10-E-No. 173, MRS. E. J. POST

Location and description—150 feet south of Tully Road and 350 feet east of end of Lucretia Avenue. Deep well turbine.

Reference point—Rim of measuring hole 6 inches above ground.

Elevation of reference point—132.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—210 feet.

Tibbetts & Kieffer Well No. 1386—About one-quarter mile west. See 9-E-No. 174.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 11	94 9	Mar. 13	101 7	Jan. 28	113 9
Dec. 13	t05 1	Sept. 17	114 4	Feb. 11	112 8
		Nov. 6	115 9	Feb. 25	112 0
		Dec. 7	115 3	Mar. 22	110 7
				Dec. 9	117 9
				1933—	
				Mar. 28	115 2

9-E-No. 174, J. O. HANSEN

Location and description—180 feet east of McLaughlin Road and 0.85 miles south of Story Road. Open casing in pit 25 feet deep.

Reference point—Top of casing 18.9 feet below three notches in southside of well curbing near ground level.

Elevation of reference point—104.1, Aneroid by Division of Water Resources.

Use—Domestic.

Depth—185 feet.

Tibbetts & Kieffer Well No. 1386—About five-eighths mile south. Elev. of R. P., 130.14.

U. S. G. S. Well No. 1422—Identical. Elev. of R. P., 123.0.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
U. S. G. S. 1422		**T. K. No. 1386**		**9-E-No. 174**	
1914—		1920—		1930—	
Jan. 10	25 3	Sept. 9	56.5	Feb. 28	53 6
Feb. 1	14 2	Sept. 28	53 5	Dec. 13	68 7
Mar. 2	11 4	Oct. 18	50 6		
April 3	11 8	Nov. 4	50.4	1931—	
May 1	12 5	Nov. 22	48.8	Mar. 13	67 0
June 3	[a]40 0	Dec. 6	47 7	Dec. 7	78 9
July 5	22.5	Dec. 28	46 2		
Aug. 1	23 2			1932—	
Sept. 2	24 7	1921—		Mar. 22	75 9
Oct. 25	21 5	Jan. 17	44 4	Dec. 9	83 1
Dec. 7	20 8	Feb. 9	41 2		
		Feb. 26	38 2	1933—	
1915—				Mar. 28	80 1
Jan. 13	12 8				
Feb. 2	11.4				
Mar. 8	11.1				
May 16	9.7				

[a] Pumping.

9-E-No. 175, V. LO BUE

Location and description—510 feet north of Tully Road and 0.20 miles east of McLaughlin Road. Deep well turbine.

Reference point—Top of casing set in concrete, near ground level.

Elevation of reference point—133.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1386—About one-half mile southwest. See 9-E-No. 174.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 11	92 5	Mar. 13	98 3	Mar. 23	109 9
Dec. 13	100.6	Sept. 17	110.7	Dec. 9	115.2
		Nov. 6	112 0		
		Dec. 7	111.7	1933—	
				Mar. 28	111.9

9-E-No. 176, WILLIAM PRUSCH

Location and description—225 feet east of King Road and 60 feet north of Cunningham Avenue. Deep well turbine.

Reference point—Top of casing about 1.0 foot above ground.

Elevation of reference point—123.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1408—About same location. Elev. of R .P., 119.42.

Remarks—Nearest log T.K. No. 1407.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1408		**9-E-No. 176**		**9-E-No. 176**	
1920—		1930—		1933—	
Sept. 6	52 0	Feb. 28	84 5	Mar. 29	106 4
Sept. 25	44.0	Dec. 13	92 6		
Oct. 19	40.2				
Nov. 4	40.0	1931—			
Nov. 22	38.2	Mar. 14	90 8		
Dec. 6	[a]39.0	Sept. 19	103 0		
Dec. 27	35 7	Nov. 6	110 2		
		Dec. 9	102 4		
1921—					
Feb. 9	30.8	1932—			
Feb. 22	31.7	Mar. 23	100 8		
		Dec. 12	102 5		

[a] Pumping.

10-E-No. 177, HILL VIEW GOLF CLUB

Location and description—60 feet east of Quimby Road and 500 feet south of intersection with Tully Road. Deep well turbine.

Reference point—Concrete floor of building about ground level.

Elevation of reference point—133.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1410—About five-eighths mile northwest. Elev. of R. P., 125.78.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1410		**10-E-No. 177**		**10-E-No. 177**	
1920—		1930—		1933—	
Sept. 11	41.0	Feb. 26	75 8	Mar. 29	96 9
Sept. 28	37.0	Dec. 13	89 8		
Oct. 19	28 8				
Nov. 4	27 4	1931—			
Nov. 22	26.7	Mar. 14	[a]96 2		
Dec. 6	25 6	Dec. 8	93 0		
Dec. 27	24.5				
		1932—			
1921—		Mar. 23	[b]98 0		
Jan. 17	23 1	Mar. 23	[c]91 0		
Feb. 9	20 6	Dec. 12	101 7		

[a] Checked and found to be correct.
[b] 9.00 a.m. Pumping had just ceased.
[c] 4.30 p.m.

10-D-No. 178, MATTENBERG ESTATE

Location and description—1,400 feet south of Cunningham Avenue from a point 2,100 feet west of White Road. Deep well turbine.

Reference point—Top of casing 1.0 foot above ground.

Elevation of reference point—130.0, Aneroid by Division of Water Resources.

Use—Domestic.

Depth—215 feet.

Tibbetts & Kieffer Well No. 1419—About three-eighths mile northeast. Elev. of R. P., 131.17.

Remarks—Well was submerged twice during winter of 1931–32.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1419		**T. K. No. 1419**		**10-D-No. 178**	
1920—		1921—		1930—	
Sept. 8	10 5	Jan. 17	7 3	Feb. 28	42.3
Sept. 27	10.0	Feb. 9	3 0	Dec. 13	45.6
Oct. 18	[a]10 9	Feb. 26	[b]4.2		
Nov. 3	[b]10 5			1931—	
Nov. 20	7.0	1922—		Mar. 14	42.9
Dec. 4	[c]8.8	Feb. 22	2.5	Dec. 8	47.7
Dec. 27	5 6				
				1932—	
				Mar. 23	41 5
				Dec. 12	43.2
				1933—	
				Mar. 29	49.3

[a] Just pumped out.
[b] Pumping.
[c] Pumped out in a.m.

10-D-No. 179, J. TEIREIXA

Location and description—60 feet west of White Road, opposite end of Marten Avenue. Deep well turbine in pit 30 feet deep.

Reference point—Top of casing, 30.4 feet below three notches in 6" x 6" timber in northwest corner of curbing at ground level.

Elevation of reference point—104.6, Aneroid by Division of Water Resources.

Use—Stand by.

Depth—184 feet.

Tibbetts & Kieffer Well No. 1419—About three-eighths mile southeast. See 10-D-No. 178.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 28	8 8	Mar. 14	15.3	Mar. 23	23 8
Dec. 13	15 6	Dec. 9	25 8	Dec. 12	30.1
				1933—	
				Mar. 29	28.9

9-D-180, QUADRO BROS.

Location and description—700 feet east of White Road and 30 feet south of private drive, 2,000 feet south of Story Road. Open casing.

Reference point—Top of casing, ground level.

Elevation of reference point—164.01 by T. & K.

Use—None.

Depth—210 feet.

Tibbetts & Kieffer Well No. 1415—In same location. Elev. of R. P., 164.01. U. S. G. S. Well No. 1462—In same location. Elev. of R. P., 164.01.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1915—		1921—		1930—	
April 27	49 4	Jan. 11	44 0	Mar. 6	69.0
		Feb. 9	43 8	Dec. 13	72.3
1920—		Feb. 26	43 5		
Sept. 8	46 5			1931—	
Sept. 27	45 0	1922—		Mar. 14	72.2
Oct. 18	44 9	Feb. 22	37 5	Dec. 9	77.5
Nov. 3	44 5				
Nov. 20	44 3			1932—	
Dec. 4	44 3			Mar. 23	77.8
Dec. 17	44.5			Dec. 12	80.5
				1933—	
				Mar. 29	80.3

9-D-No. 181, J. B. SCORSUR

Location and description—100 feet south of Story Road from a point 525 feet west of Mt. Pleasant Road. Deep well turbine.

Reference point—Rim of hole in flange of pump head, at ground level.

Elevation of reference point—230.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—450 feet.

Tibbetts & Kieffer Well No. 1213—About five-eighths mile northeast. See 9-D-No. 161.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932	
Feb. 28	149 4	Mar. 14	144 9	Mar. 23	156 1
Dec. 12	156 2	Dec. 7	172 1	Dec. 12	169.2
				1933—	
				Mar. 29	163 3

10-H-No. 182, S. C. POULSON

Location and description—175 feet south of Kooser Road and 0.25 miles west of Almaden Road. Deep well turbine.

Reference point—Rim of hole in flange of head, 1.0 foot above ground.

Elevation of reference point—197.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1515—About three-eighths mile northeast. Elev. of R. P., 184.99.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1515		**T. K. No. 1515**		**10-H-No. 182**	
1920—		1921—		1930—	
Sept. 13	48.6	Jan. 21	[a]19 3	Mar. 15	16.8
Oct. 15	54 8	Feb. 15	12 5	Dec. 5	75 0
Oct. 26	[a]65 2				
Nov. 6	61 2	1922—		1931—	
Nov. 26	58 5	Feb. 18	13.1	Mar. 12	44.5
Dec. 6	55 9			Dec. 4	89.9
Dec. 24	23 9				
				1932—	
				Mar. 19	15 9
				Dec. 7	75 7
				1933—	
				Mar. 25	35 9

[a] Pumping.

10-H-No. 183, ATHENOUR BROS.

Location and description—75 feet south of Coleman Avenue and 500 feet west of Almaden Road. Deep well turbine.

Reference point—Top of flange of pumphead at ground level.

Elevation of reference point—200.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1594—About three-eighths mile southeast. Elev. of R. P., 203.11.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1594		**10-H-No. 183**		**10-H-No. 183**	
1920—		1930—		1933—	
Sept. 16	22 5	Mar. 21	6 9	April 5	14 6
Sept. 30	22 5	Dec. 5	78 7		
Oct. 20	23.2				
Nov. 6	25.5	1931—			
Nov. 26	23 4	Mar. 12	35 5		
Dec. 6	23 5	Dec. 4	94 0		
Dec. 24	5.5				
		1932—			
1921—		Mar. 19	9 5		
Jan. 21	4 2	Dec. 10	80.6		
Feb. 15	4.7				

10-H-No. 184, H. JOHNSON

Location and description—100 feet east of Almaden Road and 1,350 feet south of Downer Avenue, on west bank of Guadalupe Creek. Deep well turbine.

Reference point—Lower surface of flange of pumphead, 6 inches above ground.

Elevation of reference point—196.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1594—About one-half mile south. See 10-H-No. 183.

Remarks—Nearest log, T. K. No. 1542 and 1543.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Mar. 21	6 7	Mar. 1	28 0	Mar. 19	9 0
Dec. 5	43 5	Mar. 20	[a]54.5	Dec. 7	44.1
		Sept. 16	46 7		
		Nov. 5	51.1	1933—	
		Dec. 4	55 3	Mar. 25	22.9

[a] Pumping.

10-G-No. 185, DAVE DAVIS

Location and description—20 feet north of Gaunbaber Lane from a point 0.25 miles west of Pearl Avenue. Deep well turbine.

Reference point—Lower surface of flange of pumphead at ground level.

Elevation of reference point—177.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—35 feet.

Tibbetts & Kieffer Well No. 1600—About one-half mile south. Elev. of R. P., 186.86.

Remarks—Nearest log, T. K. No. 1604.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1600		T. K. No. 1600		10-G-No. 185	
1920—		1921		1930—	
Sept. 11	32 7	Jan. 22	14 4	Mar. 15	17 5
Oct. 2	38 6	Feb. 15	12 5	Dec. 6	100 9
Oct. 21	39 0				
Nov. 6	39 2	1922—		1931—	
Nov. 24	39 3	Feb. 18	12 6	April 18	110 8
Dec. 8	38 9			Dec. 4	106.8
Dec. 23	15 5				
				1932—	
				Jan. 28	26 4
				Feb. 11	23 9
				Feb. 25	24 8
				Mar 19	30.8
				Dec. 10	99.2
				1933—	
				April 5	77.1

10-F-No. 186, N. JOHNSON

Location and description—500 feet east of Monterey Road and 275 feet north of Lewis Road. Deep well turbine.

Reference point—Center of pressure gauge.

Elevation of reference point—153.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—245 feet.

Tibbetts & Kieffer Well No. 1472—About one-half mile northeast. Elev. of R. P., 148.20.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1472		**10-F-No. 186**		**10-F-No. 186**	
1920—		1930—		1932—	
Sept. 15	69 0	Feb. 25	107 5	Jan. 28	126 0
Sept. 29	67 5	Dec. 11	117 0	Feb. 11	126 0
Oct. 20	65 5			Feb. 25	126 6
Nov. 4	64 5	1931—		Mar. 22	124 2
Nov. 23	63 0	Mar. 13	115 5	Dec. 9	131 5
Dec. 6	62 0	Dec. 5	128 0		
Dec. 29	60 6			1933—	
				Mar. 27	127 1
1921—					
Jan. 17	58 8				
Feb. 10	55 0				

10-F-No. 187, M. F. MATEJKE

Location and description—2,100 feet east of Monterey Road, opposite Lick Station on Southern Pacific Railroad. Deep well turbine.

Reference point—Hole in flange at ground level.

Elevation of reference point—152.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—148 feet.

Tibbetts & Kieffer Well No. 1472—About one-half mile northwest. See 10-F-No. 186.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 10	108 6	Mar. 13	114 7	Mar. 22	121 6
Dec. 11	120 3	Dec. 5	134 1	Dec. 9	130 1
				1933—	
				April 5	126 2

10-F-No. 188, M. R. QUARESMA

Location and description—700 feet west of Senter Road and 800 feet south of Lewis Road. Deep well turbine.

Reference point—Bolt hole in flange of pump head.

Elevation of reference point—149.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—140 feet.

Tibbetts & Kieffer Well No. 1472—About three-eighths mile northwest. See 10-F-No. 186.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—					
Feb. 10	99 9				
Dec. 12	(a)				

[a] No access, measurements discontinued.

10-F-No. 189, J. J. CROTHERS

Location and description—50 feet north of Lewis Avenue, 220 feet west of Senter Road. Deep well turbine.

Reference point—Top of casing.

Elevation of reference point—140.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—165 feet.

Tibbetts & Kieffer Well No. 1472—About one-quarter mile west. See 10-F-No. 186.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 10	101 4	Mar. 13	103 3	Mar. 22	114 1
Dec. 11	110 8	Dec. 5	122 6	Dec. 9	121 1
				1933—	
				Mar. 27	120.8

10-F-No. 190, C. C. DERBY

Location and description—360 feet east of southerly portion of McLaughlin Road and 90 feet north of Loup Avenue, at foot of creek bank. Deep well turbine.

Reference point—Center of pressure gauge, 5.5 feet above ground.

Elevation of reference point—140.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—204 feet.

Tibbetts & Kieffer Well No. 1458—About one-quarter mile southeast. Elev. of R. P., 146.84.

U. S. G. S. Well No. 1360—Is same location.

Remarks—Well located about 30 feet below general ground level.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
U. S. G. S. 1360		**T. K. No. 1458**		**10-F-No. 190**	
1914—		1920—		1930—	
Jan. 10	39 0	Sept. 9	71 5	Feb. 11	98 0
Feb. 3	27 0	Sept. 28	70 5	June 6	[a]117 0
Mar. 4	29 0	Oct. 18	66 6	Dec. 12	109 0
April 4	25 0	Nov. 4	66 3		
May 1	30 0	Nov. 22	65 0	1931—	
		Dec. 6	63 7	Mar. 14	105 0
1915—		Dec. 28	62 2	Dec. 7	113 5
Jan. 12	28 5				
Feb. 12	23 0	1921—		1932—	
Mar. 9	25 0	Jan. 17	60 3	Mar. 22	106 5
		Feb. 9	57.0	Dec. 9	114 5
				1933—	
				Mar. 28	110 0

[a] Pumping.

10-E-No. 191, J. A. MIRASSOU

Location and description—60 feet east of McLaughlin Road and 0.65 miles south of Tully Road. Deep well turbine.

Reference point—Rim of hole in flange, 1.0 foot above ground.

Elevation of reference point—145.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—192 feet.

Tibbetts & Kieffer Well No. 1451—About 25 feet southwest. Elev. of R. P., 145.16.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1451		T. K. No. 1451		10-E-No. 191	
1920—		1921—		1930—	
Sept. 9	68 0	Jan. 17	55 1	Feb. 26	101 5
Sept. 28	65 5	Feb. 9	52.8	Dec. 12	111 9
Oct. 8	62.5				
Nov. 4	61 6	1922—		1931—	
Nov. 22	60.4	Feb. 22	49.2	Dec. 7	123 3
Dec. 6	60 2				
Dec. 28	58.1			1932—	
				Mar. 22	118 0
				Dec. 9	126 4
				1933—	
				April 5	122.5

10-E-No. 192, MRS. JULIA SMITH

Location and description—200 feet south of Loup Avenue and 0.3 miles west of Silver Creek (King) Road. Deep well turbine.

Reference point—Rim of hole in flange at ground level.

Elevation of reference point—152.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—215 feet.

Tibbetts & Kieffer Well No. 1446—About one-quarter mile northeast. See 10-E-No. 193.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 11	111 0	Mar. 14	117.1	Mar. 22	123 9
Dec. 12	120.9	Dec. 7	128 1	Dec. 10	131.9
				1933—	
				Mar. 28	129.5

10-E-No. 193, W. S. CRANNEY

Location and description—50 feet east of King Road and 0.25 miles north of Evergreen Road. Deep well turbine.

Reference point—Lower face of flange of pump head.

Elevation of reference point—144.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1446—About one-quarter mile southeast. Elev. of R. P. 145.97.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1446		**10-E-No. 193**		**10-E-No. 193**	
1920—		1930—		1933—	
Sept. 11	62.5	Feb. 26	87.1	Mar. 28	122.1
Sept. 28	45.0	Dec. 12	113.0		
Oct. 18	41.5				
Nov. 4	40.5	1931—			
Nov. 20	40.0	Mar. 14	109.9		
Dec. 6	39.7	Dec. 7	124.2		
Dec. 27	39.4				
		1932—			
1921—		Mar. 22	116.8		
Jan. 17	38.5	Dec. 13	127.6		
Feb. 9	36.5				
Feb. 26	35.5				

10-D-No. 194, T. A. ENFANTINO

Location and description—530 feet north of Norwood Avenue, 2,220 feet east of White Road. Deep well turbine.

Reference point—Hole in flange at ground level.

Elevation of reference point—168.5, Aneroid by Division of Water Resources.

Use—None.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1427—About 500 feet south. Elev. of R. P. 225.59.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1427		**T. K. No. 1427**		**10-D-No. 194**	
1920—		1921—		1930—	
Sept. 10	79.5	Jan. 17	77.4	Feb. 26	64.6
Sept. 27	79.0	Feb. 9	78.0	Dec. 12	73.8
Oct. 18	79.2	Feb. 26	78.0		
Nov. 3	80.2			1931—	
Nov. 20	80.6	1922—		Mar. 14	71.1
Dec. 4	78.8	Feb. 22	75.1	Dec. 7	83.7
Dec. 27	78.5				
				1932—	
				Mar. 23	80.3
				Dec. 12	89.9
				1933—	
				Mar. 29	86.2

10-D-No. 195, JOHN BREEMAN

Location and description—60 feet west of Flint Avenue and 1,000 feet north of Norwood Avenue. Deep well turbine.

Reference point—Center of gauge up to and including December 12, 1930, then concrete floor.

Elevation of reference point—182.0 up to and including December 12, 1930, then 180.8; Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—329 feet.

Tibbetts & Kieffer Well No. 1427—About one-quarter mile south. See 10-D-No. 194.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 26	66.1	Mar. 14	85.0	Mar. 23	94.2
Dec. 12	[a]110.0	Dec. 7	98.9	Dec. 12	98.2
				1933—	
				Mar. 29	99.8

[a] Measurement doubtful.

10-D-No. 196, JOE CHARGIN

Location and description—60 feet east of Flint Avenue, 2220 feet north of Norwood Avenue. Deep well turbine.

Reference point—Center of gauge, 18 inches above ground.

Elevation of reference point—180.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—420 feet.

Tibbetts & Kieffer Well No. 1427—About three-eighths mile south. See 10-D-No. 194.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 26	83.6	Mar. 14	87.1	Mar. 23	97.2
Dec. 12	85.9	Dec. 7	103.2	Dec. 12	106.0
				1933—	
				Mar. 29	102.1

10-D-197, A. BOEGER

Location and description—50 feet south of Kohler Avenue, 1,100 feet east of Flint Avenue. Deep well turbine.

Reference point—Rim of hole in flange of pump head at ground level.

Elevation of reference point—213.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—275 feet.

Tibbetts & Kieffer Well No. 1419—About three-quarters mile southwest. See 10-D-No. 178.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 28	114.2	Mar. 14	119.9	Mar. 22	130.3
Dec. 12	123.7	Sept. 17	135.3	Dec. 20	143.4
		Nov. 6	137.5		
		Dec. 7	137.1	1933—	
				Mar. 29	136.6

10-H-No. 198, P. CECALA

Location and description—25 feet north of Redmond Avenue and 0.4 miles west of Almaden Road. Deep well turbine.

Reference point—Lower surface of flange of pump head at ground level.

Elevation of reference point—221.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—60 feet.

Tibbetts & Kieffer Well No. 1592—About one-eighth mile northeast. Elev. of R. P., 217.74.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1592		10-H-No. 198		10-H-No. 198	
1920—		1930—		1933—	
Sept. 16	20.0	Mar. 21	11.0	Mar. 25	14.1
Sept. 30	20.5	Dec. 5	47.2		
Oct. 20	21.0				
Nov. 6	21.6	1931—			
Nov. 26	20.4	Mar. 12	54.0		
Dec. 6	20.0	Mar. 20	56.7		
Dec. 24	15.6	Dec. 4	29.4		
1921—		1932—			
Jan. 21	10.8	Mar. 19	8.1		
Feb. 15	8.3	Dec. 10	24.2		

10-H-No. 199, BYRON SCOTT

Location and description—30 feet west of Almaden Road and 660 feet north of Redmond Avenue. Deep well turbine and pit.

Reference point—Lower surface of flange of pump head—ground level.

Elevation of reference point—216.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1592—About one-quarter mile west. See 10-H-No. 198.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Mar. 21	4.9	Mar. 12	8.6	Mar. 19	5.3
Dec. 5	16.8	Dec. 4	17.8	Dec. 10	18.9
				1933—	
				Mar. 25	5.9

10-H-No. 200, ANTONE OLIVER

Location and description—30 feet north of Downer Avenue, 50 feet west of Southern Pacific Railroad. Windmill and tank with pit.

Reference point—Foundation sill of tank, top of 2'' x 6'' on 6'' x 6'' mud sill.

Elevation of reference point—190.5, Aneroid by Division of Water Resources.

Use—Domestic.

Depth—50 feet.

Tibbetts & Kieffer Well No. 1600—About 200 feet northeast. See 10-G-No. 185.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Jan. 8	43.0	Mar. 12	32.0	Feb. 13	13.7
Mar. 20	13.0	Dec. 4	Dry	Feb. 25	15.1
Dec. 6	42.6			Mar. 19	16.2
				Dec. 10	44.8
				1933—	
				Mar. 25	27.3

10-H-No. 201, R. J. MAYNE

Location and description—450 feet north of Downer Avenue and 300 feet west of Pearl Avenue. Deep well turbine.

Reference point—Lower edge of measuring hole in side of head, 1.0 foot above ground.

Elevation of reference point—182.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1600—About three-eighths mile west. See 10-G-No. 185.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Mar. 20	31.2	Mar. 12	65.9	Feb. 25	32.9
Dec. 6	87.8	Sept. 16	105.8	Mar. 19	34.0
		Nov. 5	109.5	Dec. 10	92.8
		Dec. 4	105.2		
				1933—	
				Mar. 25	60.6

11-G-No. 202, TIM COONEY

Location and description—500 feet north of Downer Avenue from a point 750 feet west of Cahalan Avenue, centrifugal pump and pit.

Reference point—Top of casing 33.7 feet below three notches in 8" x 8" timber at ground level.

Elevation of reference point—131.0, by U. S. G. S.

Use—None.

Depth—97 feet.

Tibbetts & Kieffer Well No. 1626—About five-eighths mile southeast. See 11-G-No. 217.

U. S. G. S. Well No. 1071—Is identical. Elev. of R. P., 164.69.

Remarks—Nearest log T. K. No. 1610.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
U. S. G. S. 1071		**U. S. G. S. 1071**		**11-G-No. 202**	
1915—		1916—		1930—	
Jan. 12	11.3	Jan. 11	4.8	Mar. 20	8.8
Jan. 30	7.8	Dec. 30	10.8	Dec. 8	37.0
Feb. 23	3.2				
Mar. 5	3.3	1920—		1931—	
Mar. 19	3.4	Jan. 23	27.0	Mar. 12	29.7
Mar. 27	3.3	April 10	25.4	Dec. 4	47.1
April 23	3.3				
May 18	3.1			1932—	
				Feb. 13	23.4
				Feb. 25	18.7
				Mar. 21	11.0
				Dec. 8	34.3
				1933—	
				Jan. 16	34.1
				Mar. 25	27.8

11-G-No. 203, PEOPLES LUMBER COMPANY

Location and description—60 feet west of Snell Road, 2,000 feet south of Monterey Highway. Deep well turbine in pit.

Reference point—Top of casing 19.9 feet below top of concrete at mouth of pit, west of pump column.

Elevation of reference point—145.8 by T. & K.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1496—Is identical. Elev. of R. P., 165.72.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1496		**11-G-No. 203**		**11-G-No. 203**	
1920—		1930—		1932—	
Sept. 14	40.0	Jan. 9	45.5	Jan. 28	63.0
Sept. 28	39.5	Mar. 20	43.3	Feb. 11	60.2
Oct. 21	39.0	Dec. 22	51.1	Feb. 25	57.0
Nov. 8	39.0			Mar. 21	51.9
Nov. 24	39.0	1931—		Dec. 8	56.1
Dec. 8	39.0	Mar. 12	50.9		
Dec. 28	38.1	Dec. 4	67.3	1933—	
				Jan. 16	55.9
1921—				Mar. 25	53.9
Jan. 22	34.1				
Feb. 15	27.5				
1922—					
Feb. 18	20.0				

10-F-No. 204, E. M. BUCK

Location and description—300 feet east of Monterey Road, 0.25 miles north of intersection with Senter Road. Deep well turbine.

Reference point—Rim of hole in flange at ground level.

Elevation of reference point—164.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1489—About one-quarter mile southeast. Elev. of R. P., 172.39.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1489		**T. K. No. 1489**		**10-F-No. 204**	
1920—		1921—		1930—	
Sept. 14	69.0	Jan. 18	58.8	Feb. 10	96.6
Sept. 28	63.5	Feb. 10	53.3	Dec. 11	105.9
Oct. 21	62.9				
Nov. 9	62.5	1922—		1931—	
Nov. 23	62.5	Feb. 18	47.0	Mar. 13	103.6
Dec. 7	[a]67.2			Dec. 5	123.4
Dec. 28	61.0				
				1932—	
				Mar. 22	106.1
				Dec. 8	116.2
				1933—	
				Jan. 16	115.8
				Mar. 27	112.2

[a] Pumped recently.

10-F-No. 205, HENRY LESTER

Location and description—100 feet south of a point on private drive 1,100 feet west of Senter Road. Private drive is 775 feet south of Hellyer Road. Deep well turbine.

Reference point—Top of casing, 1.0 foot above ground.

Elevation of reference point—170.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kiefer Well No. 1480—About one-quarter mile northeast. Elev. of R. P., 166.60.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1480		**T. K. No. 1480**		**10-F-No. 205**	
1920—		1921—		1930—	
Sept. 15	60.0	Jan. 17	56.9	Feb. 10	102.6
Sept. 29	[a]65.0	Feb. 10	55.5	Dec. 11	127.8
Oct. 20	61.5				
Nov. 9	60.2	1922—		1931—	
Nov. 23	59.7	Feb. 24	53.5	Mar. 13	124.8
Dec. 7	59.4			Dec. 5	141.5
Dec. 29	57.8				
				1932—	
				Mar. 31	118.9
				Dec. 9	140.5
				1933—	
				April 5	139.1

[a] Doubtful.

10-F-No. 206, ELMER BROS. NURSERY

Location and description—520 feet south of Singleton Road and 0.5 miles east of Senter Road about 300 yards west of Coyote River. Deep well turbine.

Reference point—Rim of hole in flange at ground level.

Elevation of reference point—167.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1458—About three-eighths mile northwest. See 10-F-No. 190.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 25	96.4	Mar. 13	129.0	Mar. 22	128 9
Dec. 11	132.0	Dec. 5	147.2	Dec. 9	145.8
				1933—	
				Mar. 27	142 6

10-F-No. 207, WEAVER & STEVENS

Location and description—60 feet east of McLaughlin Road, 2260 feet south of prolongation of Singleton, 100 feet from Coyote River. Deep well turbine.

Reference point—Center of gauge, 6 inches above concrete floor.

Elevation of reference point—171.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—312 feet.

Tibbetts & Kieffer Well No. 1456—About same location. Elev. of R. P., 172.23.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1456		10-F-No. 207		10-F-No. 207	
1920—		1930—		1932—	
Sept. 9	92.5	Feb. 25	[a]166.3	Mar. 22	114.8
Sept. 28	92.0	Feb. 26	122.1	Dec. 10	123 1
Oct. 18	89.3	Dec. 12	130.1		
Nov. 4	88 2			1933—	
Nov. 22	87.3	1931—		Mar. 28	118 3
Dec. 6	86.0	Mar. 14	[a]164.1		
Dec. 28	84 6	Mar. 25	128.9		
		Sept. 17	129.1		
1921—		Nov. 6	129.4		
Jan. 17	84 0	Dec. 7	125.7		
Feb. 9	80.0				

[a] Pumping.

10-F-No. 208, J. F PYLE & SON

Location and description—30 feet east of McLaughlin (Tuers) Road and 320 feet south of prolongation of Singleton Road, 75 feet east of Coyote River. Deep well turbine.

Reference point—Top of concrete at ground level.

Elevation of reference point—168.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—355 feet.

Tibbetts & Kieffer Well No. 1458—About one-quarter mile northwest. See 9-F-No. 190.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 11	122.2	Mar. 14	127.9	Mar. 22	134.5
Dec. 12	123.0	Sept. 17	152.9	Mar. 23	[a]134.6
		Nov. 6	150.1	Dec. 10	154.9
		Dec. 7	150.8	1933—	
				Mar. 28	141.1

[a] Measurements of March 22, 1932, appear inconsistent with Wells 10-F-No. 207 and 10-F-No. 190, therefore the measurement at this well was repeated.

10-E-No. 209, JOE GASPER

Location and description—250 feet east of Silver Creek Road and 0.55 miles south of Loup Avenue. Deep well turbine.

Reference point—Top of concrete 2.0 feet above ground.

Elevation of reference point—159.5 Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—325 feet.

Tibbetts & Kieffer Well No. 1444—Is same location. Elev. of R. P., 162.04.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1444		**T. K. No. 1444**		**10-E-No. 209**	
1920—		1921—		1930—	
Sept. 10	45.5	Jan. 17	47.5	Feb. 11	96.1
Sept. 27	46.0	Feb. 9	47.5	Dec. 12	111.2
Oct. 18	46.6	Feb. 26	47.0		
Nov. 4	46.6			1931—	
Nov. 20	47.0	1922—		Mar. 14	107.9
Dec. 6	47.5	Feb. 22	49.0	Dec. 7	122.9
Dec. 27	47.7				
		1930—		1932—	
		June 7	([a])	Mar. 22	117.9
				Dec. 10	124.9
				1933—	
				Mar. 28	120.3

[a] Well has been dry for several years.

11-E-No. 210, S. A. PFEFFER

Location and description—450 feet east of Silver Creek Road and 0.9 miles south of Loup Avenue. Deep well turbine.

Reference point—Concrete floor.

Elevation of reference point—180.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—340 feet.

Tibbetts & Kieffer Well No. 1444—About three-eighths mile northwest. See 10-E-No. 209.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 11	115.0	Mar. 14	122.7	Mar. 22	128.3
Dec. 12	123.6	Dec. 7	129.3	Dec. 13	128.9
				1933—	
				Mar. 28	127.9

10-E-No. 211, T. K. NACAHARA

Location and description—100 feet north of Evergreen Road and 0.7 miles east of King Road. Deep well turbine.

Reference point—Rim of hole in flange 1 foot above ground level.

Elevation of reference point—184.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1442—About one-half mile east. See 11-E-No. 212.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 25	79.5	Mar. 14	89.8	Mar. 22	102.5
Dec. 22	94.9	Dec. 7	107.1	Dec. 13	102.9
				1933—	
				Mar. 28	98.1

11-E-No. 212, EVERGREEN SCHOOL

Location and description—200 feet west of White Road and 400 feet south of Evergreen Road. Deep well turbine inside tankhouse.

Reference point—Hole in iron cover of casing about 1.0 foot above ground.

Elevation of reference point—211.42 by T. & K.

Use—Domestic.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1442—Is identical. Elev. of R. P., 214.42.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1920—		1921—		1931—	
Sept. 10	56.0	Jan. 17	47.5	Mar. 14	81.3
Sept. 27	47.0	Feb. 9	46.0	April 18	85.9
Oct. 18	47.0	Feb. 26	45.1	June 29	88.1
Nov. 3	47.5			Sept. 17	84.1
Nov. 20	47.3	1922—		Nov. 6	87.1
Dec. 4	47.5	Feb. 22	39.5	Dec. 7	88.2
Dec. 27	47.7				
		1930—		1932—	
		Feb. 26	67.6	Mar. 22	71.1
		Dec. 12	75.0	Dec. 13	78.8
				1933—	
				Mar. 28	78.7

10-E-No. 213, W. L. EDWARDS

Location and description—275 feet west of White Road and 0.45 miles north of Evergreen Road. Open casing.

Reference point—Top of concrete around casing 1.0 foot above ground.

Elevation of reference point—185.5, Aneroid by Division of Water Resources.

Use—Test well.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1442—About five-eighths mile southeast. See 11-E-No. 212.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 25	54.1	Mar. 14	63.1	Mar. 23	60.1
Dec. 12	90.1	Dec. 7	[a]127.1	Dec. 12	64.1
		Dec. 8	74.6		
				1933—	
				Mar. 28	62.1

[a] Well 10 feet distant pumping about 100 g.p.m.

11-D-No. 214, A. NELSON

Location and description—500 feet south of Quimby Road from a point 0.7 miles east of White Road. Deep well turbine.

Reference point—Hole in flange at ground level.

Elevation of reference point—231.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—703 feet.

Tibbetts & Kieffer Well No. 1427—About five-eighths mile northwest. See 10-D-No. 194.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 26	112.5	Mar. 14	[a]136.7	Mar. 23	122.9
Dec. 12	128.8	Sept. 17	136.2	Dec. 12	137.6
		Nov. 6	151.6		
		Dec. 8	142.7	1933—	
				Mar. 28	125.0

[a] Pump 50 feet distant in operation.

11-G-No. 215, M. B. SILVEIRA

Location and description—60 feet west of Blossom Avenue and 2,700 feet south of Downer Avenue. Deep well turbine.

Reference point—Rim of hole in flange at ground level.

Elevation of reference point—161.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—200 feet.

Tibbetts & Kieffer Well No. 1626—About one-half mile northeast. See 11-G-No. 217.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Mar. 20	44.6	Mar. 12	58.5	Mar. 21	50.0
Dec. 8	59.5	Sept. 16	[a]77.8	Dec. 8	63.1
		Nov. 5	76.3		
		Dec. 4	75.1	1933—	
				Mar. 25	57.5

[a] Pump 40 feet distant in operation.

11-G-No. 216, GEORGINE MACHAD

Location and description—100 feet east of Blossom Avenue and 650 feet south of Downer Avenue. Open casing.

Reference point—Top of casing.

Elevation of reference point—165.0, Aneroid by Division of Water Resources.

Use—None.

Depth—40 feet.

Tibbetts & Kieffer Well No. 1626—About one-eighth mile east. See 11-G-No. 217.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—					
Jan. 9	23.1				
Mar. 20	16.0				
Dec. 8	25.5				

11-G-No. 217, GEORGINE MACHAD

Location and description—600 feet south of Downer Avenue and 800 feet east of Blossom Avenue. Deep well turbine and pit.

Reference point—Top of casing 25.8 feet below 6'' x 6'' across pit up to and including March 20, 1930, then top of casing of new well drilled in same pit.

Elevation of reference point—136.8 up to and including March 20, 1930, then 163.1.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1626—Is identical. Elev. of R. P., 162.62.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1626		**T. K. No. 1626**		**11-G-No. 217**	
1920—		1921—		1930—	
Sept. 11	28.4	Jan. 22	22.2	Mar. 20	20.2
Oct. 2	28.3	Feb. 15	16.0	Dec. 8	59.8
Oct. 21	28.0				
Nov. 6	28.1	1922—		1931—	
Nov. 24	28.2	Feb. 18	12.1	Mar. 12	58.7
Dec. 8	28.2			Dec. 4	77.0
Dec. 28	27.1				
				1932—	
				Feb. 13	62.0
				Feb. 25	59.2
				Mar. 21	52.6
				Dec. 8	64.2
				1933—	
				Mar. 25	59.1

11-G-No. 218, L. SILVERIA

Location and description—350 feet south of Downer Avenue and 0.3 miles east of Snell Road. Deep well turbine in pit

Reference point—Top of casing 16.5 feet below three notches in well curb at ground level.

Elevation of reference point—156.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—115 feet.

Tibbetts & Kieffer Well No. 1651—About three-eighths mile east. Elev. of R. P., 175.92.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1651		**T. K. No. 1651**		**11-G-No. 218**	
1920—		1921—		1930—	
Oct. 2	33.5	Jan. 22	24.5	Mar. 20	45.9
Oct. 21	31.2	Feb. 16	22.6	Dec. 8	[a]
Nov. 6	32.9				
Nov. 26	32.2				
Dec. 9	32.0				
Dec. 29	31.2				

[a] Well abandoned, pit caved in, measurements impossible. Well 11-G-No. 218a substituted.

11-G-No. 218a, L. SILVERIA

Location and description—About 30 feet northeast of 11-G-No. 218. Deep well turbine.

Reference point—Top of casing near ground level.

Elevation of reference point—174.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Remarks—This well substituted for 11-G-No. 218.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Dec. 8	69.8	Mar. 12	68.8	Mar. 21	73.1
		Dec. 4	85.6	Dec. 8	73.1
				1933—	
				Mar. 25	72.0

11-G-No. 219, W. A. HEATON

Location and description—75 feet south of Chynoweth Avenue and 0.5 miles west of intersection with Monterey Road. Deep well turbine and pit.

Reference point—Rim of hole in flange at ground level.

Elevation of reference point—178.0, Aneroid by Division of Water Resources.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1633— About one-half mile northwest. Elev. of R. P., 181.47.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1633		**T. K. No. 1633**		**11-G-No. 219**	
1920—		1921—		1930—	
Sept. 28	44.6	Jan. 24	40.5	Mar. 20	65.7
Oct. 2	45.0	Feb. 15	32.8	Dec. 11	72.8
Oct. 7	44.5				
Oct. 25	44.5	1922—		1931—	
Nov. 8	44.9	Feb. 20	31.2	Mar. 12	71.9
Nov. 26	45.4			Sept. 16	87.4
Dec. 8	45.0			Nov. 5	89.8
Dec. 29	44.2			Dec. 4	88.9
				1932—	
				Mar. 21	74.9
				Dec. 8	74.9
				1933—	
				Jan. 16	74.7
				Mar. 25	72.9

11-F-No. 220, ELMER BROS. NURSERY

Location and description—175 feet north of Senter Road and 0.5 miles east of north branch of Senter Road, 300 feet west of Coyote River. Deep well turbine.

Reference point—Lower edge of hole in casing for discharge pipe, 1.0 foot below ground.

Elevation of reference point—176.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—235 feet.

Tibbetts & Kieffer Well No. 1481—Is identical. Elev. of R. P., 176.33.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1481		11-F-No. 220		11-F-No. 220	
1920—		1930—		1932—	
Sept. 15	[a]107.5	Feb. 25	132 8	Mar. 31	93.5
Sept. 30	83.7	Dec. 11	134.5	Dec. 10	138.1
		1931—		1933—	
		Mar. 13	128.3	Mar. 27	137.7
		Dec. 5	151.0		

[a] Pumping.

11-D-No. 221, G. GATTUCCIO

Location and description—50 feet north of Fowler Road and 0.35 miles east of White Road. Deep well turbine.

Reference point—Rim of hole in flange.

Elevation of reference point—263.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—480 feet.

Tibbetts & Kieffer Well No. 1442—About three-quarters mile northwest. See 11-E-No. 212.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 25	71.3	Mar. 14	76.0	Mar. 22	77.9
Dec. 12	74.9	Dec. 7	90.1	Dec. 13	81.9
				1933—	
				Mar. 28	85.1

11-D-No. 222, A. S. MELLO

Location and description—30 feet south of Fowler Road and 0.7 miles east of White Road. Deep well turbine.

Reference point—Top surface of flange of pumphead.

Elevation of reference point—343.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—270 feet.

Tibbetts & Kieffer Well No. 1442—About one and one-half mile west. See 11-E-No. 212.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Feb. 25	72.1	Mar. 14	138.2	Mar. 22	144.3
Dec. 12	138.6	Sept. 17	146.8	Dec. 13	148.3
		Nov. 6	147.9		
		Dec. 7	149.2	1933—	
				Mar. 28	148.0

12-G-No. 223, CHAS. FROST

Location and description—100 feet east of Cottle Road, one-half mile south of Monterey Road. Windmill.

Reference point—Top of casing, 22 inches above ground.

Elevation of reference point—192.0, Aneroid by Division of Water Resources.

Use—Domestic.

Depth—90 feet.

Tibbetts & Kieffer Well No. 1676—About one-quarter mile south. Elev. of R. P., 187.73.

U. S. G. S. Well No. 1009—About one-quarter mile northwest. Elev. of R. P., 183.06.

Remarks—The fluctuation of the water level in this well is unlike any other in this vicinity

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
U. S. G. S. 1009		**T. K. No. 1676**		**12-G-No. 223**	
1914—		1920—		1930—	
Nov. 23	15 7	Sept. 15	35 6	Jan. 13	61.9
		Oct. 1	36.5	Mar. 20	61.9
1916—		Oct. 22	35.2	Dec. 8	61 4
Jan. 11	8 0	Nov. 6	[a]40 1	Dec. 22	62.5
Dec. 30	11.9	Nov. 26	38 2		
		Dec. 9	37.5	1931—	
		Dec. 29	37.0	Mar. 12	62.7
				Dec. 4	62.6
		1921—			
		Jan. 22	34 6	1932—	
		Feb. 16	29.0	Mar. 21	81.6
				Dec. 8	81.6
		1922—			
		Feb. 20	25.2	1933—	
				Jan. 16	79.4
				Mar. 25	76.8

[a] Pump 800 feet to southeast in operation.

11-F-No. 224, E. C. ROBERTSON

Location and description—175 feet west of Senter Road, one-half mile north of Ford Road. Deep well turbine in pit.

Reference point—Three notches cut in 8" x 8" timber, across top of pit by U. S. G. S.

Elevation of reference point—195.50 by T. & K.

Use—Irrigation.

Depth—96-100 feet.

Tibbetts & Kieffer Well No. 1661—Is identical.

U. S. G. S. Well No. 1012—Is identical.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1920—		1921—		1930—	
Sept. 14	46.8	Jan. 22	43.0	Jan. 13	80.0
Oct. 1	47.1	Feb. 16	36.3	Dec. 11	(a)
Oct. 22	47 0				
Nov. 8	47.3	1922—			
Nov. 27	48 1	Feb. 20	33 1		
Dec. 9	48.5				
Dec. 29	46.1				

[a] Well abandoned and further measurements impossible. Well 11-F-224a substituted.

11-F-No. 224a, E. C. ROBERTSON

Location and description—1,000 feet west of Senter Road and 20 feet north of private lane meeting Senter Road 0.35 miles from Ford Road. Deep well turbine.

Reference point—Rim of hole in side of pumphead 1.0 foot above ground.

Elevation of reference point—193.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Remarks—This well is substituted for 11-F-No. 224.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Dec. 11	81.1	Mar. 12	79.1	Mar. 31	75.7
		Dec. 5	96.9	Dec. 10	81.8
				1933—	
				Mar. 27	80.6

12-G-No. 225, H. B STEWART

Location and description—1,000 feet east of Cottle Road and 100 feet north of private lane, lying east of Cottle Road, 1.0 mile south of Downer Avenue. Deep well turbine.

Reference point—Lower edge of hole in side of pumphead, 6 inches above ground.

Elevation of reference point—194.0, Aneroid by Division of Water Resources.

Use—Domesti and irrigation.

Depth—170 feet.

Tibbetts & Kieffer Well No. 1692—About three-eighths mile east. Elev. of R. P., 195.55.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1692		**12-G-No. 225**		**12-G-No. 225**	
1920—		1930—		1932—	
Sept. 15	39.2	Mar. 20	65.1	Mar. 21	70.3
Oct. 1	39.2	Dec. 8	76.1	Dec. 8	76.4
Oct. 21	39.7				
Nov. 9	40.2	1931—		1933—	
Nov. 26	40.7	Mar. 12	74.8	Jan. 16	74.1
Dec. 9	40.9	June 29	89.2	Mar. 25	72.2
Dec. 29	40.6	Sept. 16	88.2		
		Nov. 5	92.9		
1921—		Dec. 4	92.4		
Jan. 22	38.6				
Feb. 16	32.8				

12-G-No. 226, G. T. HELLYER

Location and description—125 feet southwest of Monterey Road and 750 feet southeast of the prolongation of Ford Road. Deep well turbine.

Reference point—Lower edge of hole in side of head, 1.0 foot above ground.

Elevation of reference point—195.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—175 feet.

Tibbetts & Kieffer Well No. 1695—About one-half mile southeast. Elev. of R. P., 195.53.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1695		**12-G-No. 226**		**12-G-No. 226**	
1920—		1930—		1932—	
Sept. 15	37.5	Mar. 21	76.0	Mar. 21	80.7
Oct. 1	38.0	Dec. 11	84.0	Dec. 8	84.3
Oct. 22	36.8				
Nov. 8	[a]39.0	1931—		1933—	
Nov. 26	[a]39.3	Mar. 12	82.5	Jan. 16	83.1
Dec. 9	38.3	Sept. 16	[a]108.0	Mar. 25	83.4
Dec. 29	41.9	Nov. 6	101.2		
		Dec. 8	100.5		
1921—					
Jan. 22	38.0				
Feb. 16	32.8				
1922—					
Feb. 20	28.7				

[a] Pumping.

12-F-No. 227, D. T. BORGE

Location and description—225 feet northwest of private drive, parallel to and 2,275 feet northwest from Tennant Avenue and 0.5 miles northeast from Monterey Road. Deep well turbine.

Reference point—Rim of hole in flange, 1.0 foot above ground.

Elevation of reference point—213.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1704—About one-sixteenth mile southeast. Elev. of R. P., 210.67.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1704		**12-F-No. 227**		**12-F-No. 227**	
1920—		1930—		1933—	
Sept. 14	52.9	Mar. 21	77.4	Mar. 25	90.7
Oct. 1	53.7	Dec. 11	95.3		
Oct. 22	54.1				
Nov. 9	54.6	1931—			
Nov. 26	56.0	Mar. 12	94.1		
Dec. 9	56.6	Sept. 16	111.5		
Dec. 29	54.3	Nov. 6	115.1		
		Dec. 4	113.5		
1921—					
Jan. 22	49.2	1932—			
Feb. 16	33.8	Mar. 21	68.9		
		Dec. 8	95.0		

12-F-No. 228, J. H. GILMAN

Location and description—50 feet north of Piercy Road and 1,690 feet along winding road from Ford Road bridge. Deep well turbine in pit.

Reference point—Top of casing 33.9 feet below three notches in well curb on north side of pit near ground level.

Elevation of reference point—160.1, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1698—About one-quarter mile west. Elev. of R. P., 204.68.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1698		**T. K. No. 1698**		**12-F-No. 228**	
1920—		1921—		1930—	
Sept. 14	52 4	Jan. 22	27.7	Mar. 21	46 0
Oct. 1	53.0	Feb. 16	26 7	Dec. 11	(b)
Oct. 22	53.0				
Nov. 8	54.3	1922—			
Nov. 27	[a]59.5	Feb. 20	26.8		
Dec. 9	55.1				
Dec. 29	41 5				

[a] Pumping.
[b] Well abandoned, pit caving in. 12-F-No. 228a substituted.

12-F-No. 228a, J. H. GILMAN

Location and description—10 feet west of Well 12-F-No. 228.

Reference point—Rim of hole in flange at ground level.

Elevation of reference point—194.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—Unknown.

Remarks—This well is substituted for 12-F-No. 228.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Dec. 11	92.2	Mar. 25	92.1	Mar. 31	79.5
		Sept. 17	105.6	Dec. 10	90.9
		Nov. 6	108.5		
		Dec. 5	107.3	1933—	
				Mar. 27	89.2

12-G-No. 229, E. L. PETERSON

Location and description—60 feet west of Martin Lane and 1,980 feet south of Monterey Highway, near Pomar. Deep well turbine.

Reference point—Top of casing 23.3 feet below three notches in north corner of curbing at ground level.

Elevation of reference point—184.2, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—87 feet

Tibbetts & Kieffer Well No. 1690—About three-eighths mile southwest. Elev. of R. P., 204.0.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1690		**T. K. No. 1690**		**12-G-No. 229**	
1920—		1921—		1930—	
Sept. 14	45.9	Jan. 24	44 6	Mar. 20	45.2
Oct. 1	46.1	Feb. 16	38.6	Dec. 11	(a)
Oct. 22	46.3				
Nov. 9	47.2				
Nov. 26	48 7				
Dec. 10	48 0				
Dec. 27	47.6				

[a] This well dry. Well 12-G-No. 229a substituted.

12-G-No. 229a, WILLIAM COBB

Location and description—600 feet southeast of Martinvale Road and 500 feet southwest of Cobb Avenue, near Pomar. Open casing.

Reference point—Top of casing at ground level.

Elevation of reference point—209.5, Aneroid by Division of Water Resources.

Use—None.

Depth—100 feet.

Remarks—This well substituted for 12-G-No. 229.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—			
Dec. 11	93.8	Mar. 12	91.7		
		Dec. 4	(a)		

[a] Well dry. Well 12-G-No. 229b substituted.

12-G-No. 229b, E. L. PETERSON

Location and description—50 feet north of well 12-G-No. 229. Deep well turbine.

Reference point—Rim of hole in flange of head, at ground level.

Elevation of reference point—207.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—273 feet.

Remarks—This well substituted for 12-G-No. 229a.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1931—		1932—		1933—	
Dec. 4	109.1	Mar. 21	70 1	Mar. 25	87.3
		Dec. 8	89.8		

13-F-No. 230, J. E. ROBERTSON

Location and description—300 feet east of Monterey Highway, opposite end of Fitzgerald Road. Pit, two wells and centrifugal pump.

Reference point—Three notches in top surface of northeast side of well curb.

Elevation of reference point—221.93 by U. S. G. S.

Use—None.

Depth—91 feet.

Tibbetts & Kieffer Well No. 1717—Is identical. Elev. of R. P., 220.76.

U. S. G. S. Well No. 876—Is identical.

Date	Dist. R. P. to water surface, feet
U. S. G. S. 876	
1914—	
Nov. 23	35.5
Dec. 13	35.3
1915—	
Jan. 10	31.1
Jan. 28	28.3
Feb. 8	21.0
Feb. 20	19.0
Mar. 28	17.2
April 15	16.9
May 8	17.1
1916—	
Jan. 7	24.5
1920—	
Jan. 23	35.8
April 10	30.5

Date	Dist. R. P. to water surface, feet
T. K. No. 1717	
1920—	
Oct. 7	53.8
Oct. 26	54.3
Nov. 10	54.7
Nov. 26	54.9
Dec. 9	55.4
Dec. 29	53.8
1921—	
Jan. 24	48.1
Feb. 16	37.7
May 23	33.0
June 2	34.6
June 14	36.3
June 23	36.1
July 12	38.4
July 23	38.8
Aug. 1	39.4
Aug. 9	39.9
Sept. 1	41.8
Sept. 7	42.4
Sept. 20	43.3
Oct. 1	44.0
Oct. 15	45.0
Oct. 22	46.3
Oct. 31	46.7

Date	Dist. R. P. to water surface, feet
T. K. No. 1717	
1921—	
Nov. 12	47.7
Nov. 26	48.6
Dec. 12	49.8
Dec. 22	50.7
1922—	
Jan. 2	48.6
Jan. 6	45.5
Jan. 15	43.0
Feb. 5	39.9
Feb. 11	35.0
Feb. 20	33.0
13-F-No. 230	
1930—	
Jan. 13	72.4
Dec. 11	75.9
1931—	
Mar. 12	76.0
Dec. 5	Dry
1932—	
Mar. 21	51.4
Dec. 8	70.8
1933—	
Mar. 24	66.5

13-F-No. 231, F. S. PIMENTAL

Location and description—2,300 feet south of Tennant Avenue and 2,200 feet east of Monterey Highway. Deep well turbine.

Reference point—Rim of hole in flange at ground level.

Elevation of reference point—216.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—142 feet.

Tibbetts & Kieffer Well No. 1707—About one-quarter mile west. Elev. of R. P., 206.35.

Remarks—Nearest log T. K. No. 1708.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1707		**T. K. No. 1707**		**13-F-No. 231**	
1920—		1921—		1930—	
Sept. 14	45.3	Jan. 22	44.1	Mar. 20	62.9
Oct. 1	46.0	Feb. 16	32.4	Dec. 6	95.9
Oct. 22	46.3				
Nov. 9	47.0			1931—	
Nov. 26	47.8			Mar. 12	89.4
Dec. 9	48.5			Dec. 4	116.2
Dec. 29	48.0				
				1932—	
				Mar. 21	61.1
				Dec. 8	92.7
				1933—	
				Mar. 25	[a]96.0
				April 5	86.5

[a] Pumping.

13-F-No. 232, Y. FUGIKAWA

Location and description—50 feet northeast of Monterey Road and 2,800 feet southeast of Fitzgerald Road. Deep well turbine.

Reference point—Lower edge of hole in side of head, 1.0 foot above ground.

Elevation of reference point—233.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1723—About one-quarter mile southeast. Elev. of R. P., 233.88.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1723		**T. K. No. 1723**		**13-F-No. 232**	
1920—		1921—		1930—	
Sept. 14	47.9	Jan. 24	28.7	Mar. 21	44.9
Oct. 1	48.5	Feb. 16	25.3	Dec. 11	65.9
Oct. 22	48.7				
Nov. 9	50.6			1931—	
Nov. 26	49.2			Mar. 12	65.3
Dec. 10	49.4			Sept. 16	85.8
Dec. 29	38.0			Nov. 6	87.0
				Dec. 5	90.9
				1932—	
				Mar. 21	42.0
				Dec. 8	64.9
				1933—	
				Mar. 24	54.8

13-F-No. 233, M. RIGHETTI

Location and description—850 feet east of Monterey Road near bridge across Coyote River at bend in highway, 1½ miles south of Pomar. Deep well turbine in pit.

Reference point—Top of casing 9.5 feet below top of 10" x 10" across pit.

Elevation of reference point—233.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1723—About one-half mile northwest. See 13-F-No. 232.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Jan. 13	25.8	Mar. 12	26.5	Mar. 21	3.1
Mar. 21	2.2	Dec. 5	36.0	Dec. 8	21.9
Dec. 8	24.9			1933—	
				Mar. 24	18.3

14-G-No. 234, S. W. COBB

Location and description—1,500 feet south of Bailey Avenue, one-half mile west of Monterey Highway. Windmill.

Reference point—Top of casing, 15 inches above ground.

Elevation of reference point—258.0, Aneroid by Division of Water Resources.

Use—Domestic.

Depth—60 feet.

Tibbetts & Kieffer Well No. 1739—About three-eighths mile north. Elev. of R. P., 257.93.

Remarks—Depth of T. K. No. 1739, 13.5 feet.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1739		**T. K. No. 1739**		**14-G-No. 234**	
1920—		1921—		1930—	
Sept. 22	13.0	Jan. 24	11.8	Jan. 13	28.9
Oct. 13	Dry			Dec. 8	27.7
Oct. 26	Dry	1922—		1931—	
Nov. 9	Dry	Feb. 20	5.5	Mar. 12	29.5
Nov. 27	Dry			Dec. 5	32.0
Dec. 10	Dry			1932—	
				Mar. 21	8.8
				Dec. 8	21.3
				1933—	
				Mar. 24	16.9

14-G-No. 235, C. O. BOCK

Location and description—50 feet west of Bailey Avenue and 125 feet south of Monterey Highway. Deep well turbine.

Reference point—Rim of hole in flange at ground level.

Elevation of reference point—257.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1737—About one-quarter mile north. Elev. of R. P., 261.12.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1737		14-G-No. 235		14-G-No. 235	
1920—		1930—		1932—	
Sept. 22	22.5	Mar. 20	17.3	Mar. 21	10.6
Oct. 13	23.3	Dec. 8	31.0	Dec. 8	24.9
Oct. 26	23.1				
Nov. 10	22.6	1931—		1933—	
Nov. 27	[a]23.0	Mar. 12	34.1	Mar. 24	19.9
Nov. 27	[b]22.0	Sept. 16	43.1		
Dec. 19	23.6	Nov. 6	49.8		
		Dec. 5	46.1		
1921—					
Jan. 24	13.8				

[a] 12 m.
[b] 1.30 p.m.

14-G-No. 236, O. E. ROUSE

Location and description—200 feet southwest of Monterey Road and 0.3 miles northwest of Richmond Avenue and 1.2 miles northwest of Palm Avenue. Deep well turbine in pit.

Reference point—Lower edge of hole in side of head, 1.0 foot above ground.

Elevation of reference point—280.5, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—150 feet.

Tibbetts & Kieffer Well No. 1747—About one-quarter mile north. Elev. of R. P., 276.04.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1747		14-G-No. 236		14-G-No. 236	
1920—		1930—		1932—	
Sept. 22	32.3	Mar. 21	31.2	Mar. 21	23.0
Oct. 13	33.0	Dec. 8	53.3	Dec. 8	45.7
Oct. 26	33.4				
Nov. 10	33.9	1931—		1933—	
Nov. 27	34.5	Mar. 12	51.5	Mar. 24	38.2
Dec. 10	35.0	Nov. 6	68.2		
		Dec. 5	68.2		
1921—					
Jan. 24	21.9				

15-G-No. 237, A. L. CHRISTOPHER

Location and description—150 feet west of Palm Avenue and 2,000 feet south of Monterey Highway, Perry Station Centrifugal pump and pit.

Reference point—Edge of north corner of pit curb, at ground level.

Elevation of reference point—285.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—110 feet.

Tibbetts & Kieffer Well No. 1766—About one-eighth mile southwest. Elev. of R. P., 289.56.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1766		**15-G-No. 237**		**15-G-No. 237**	
1920—		1930—		1932—	
Sept. 20	32.0	Mar. 20	18.9	Mar. 21	10.8
Oct. 12	32.7	Dec. 8	47.4	Dec. 8	40.7
Oct. 26	33.8				
Nov. 10	34.3	1931—		1933—	
Nov. 27	35.0	Mar. 13	42.1	Mar. 24	25.5
Dec. 10	35.5	Dec. 5	60.8		
1921—					
Jan. 25	33.5				

15-G-No. 238, RALPH BOHNETT

Location and description—600 feet east of Monterey Road, 1,400 feet south of prolongation of Palm Avenue, on west bank of Coyote River. Deep well turbine and pit.

Reference point—Nail and tin on northeast corner of curbing.

Elevation of reference point—309.71 by T. & K.

Use—Domestic and irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1771—Is identical.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1771		**T. K. No. 1771**		**15-G-No. 238**	
1920—		1921—		1930—	
Sept. 22	46.5	Jan. 24	12.5	Jan. 13	61.7
Oct. 12	48.0			Mar. 21	14.6
Oct. 26	49.0	1922—		Dec. 8	61.2
Nov. 10	[b]59.2	Feb. 20	9.7		
Nov. 27	50.2			1931—	
Dec. 10	[a]31.3			Mar. 25	51.4
				Dec. 5	77.2
				1932—	
				Mar. 21	13.0
				Dec. 10	52.4
				1933—	
				Mar. 24	32.7

[a] Coyote River flowing.
[b] Pumping.

15-G-No. 239, POSSI & BARLOCCI WINERY

Location and description—40 feet northwest of Mira Monte Avenue and 0.4 miles southwest of Monterey Highway. Deep well turbine.

Reference point—Rim of hole in flange, 6 inches above ground.

Elevation of reference point—308.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1780—About one-quarter mile southwest. Elev. of R. P., 307.06.

Remarks—Nearest logs, T. K. No. 1774 and 1776.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1780		**15-G-No. 239**		**15-G-No. 239**	
1920—		1930—		1932—	
Sept. 20	35 5	Mar. 21	29.3	Mar. 21	21 4
Oct. 12	[a]39.3	Dec. 8	61.5	Dec. 10	49 9
Oct. 26	37.7				
Nov. 10	38.1	1931—		1933—	
Nov. 27	[b]39.3	Mar. 13	49.6	Mar. 24	31 9
Dec. 10	29 6	Sept. 17	71.6		
		Nov. 5	78.0		
1921—		Dec. 5	71.3		
Jan. 25	31 2				

[a] Had been pumping all night.
[b] Pumping.

16-G-No. 240, T. J. KIRBY

Location and description—125 feet northwest of Kirby Avenue and 250 feet northeast of Monterey Road. Deep well turbine.

Reference point—Top of pumphead flange at ground level.

Elevation of reference point—342.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—165 feet.

Tibbetts & Kieffer Well No. 1789—About one-quarter mile southeast. Elev. of R. P., 333.99.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1789		**T. K. No. 1789**		**16-G-No. 240**	
1920—		1921—		1930—	
Sept. 20	46 5	Jan. 25	44 4	Mar. 21	35 2
Oct. 12	47 4			May 28	[a]68 0
Oct. 26	[a]48 5	1922—		Dec. 8	76 5
Nov. 10	48 6	Feb. 20	25.1		
Nov. 27	49.6			1931—	
Dec. 11	50 0			Mar. 13	67 0
				Dec. 5	92.0
				1932—	
				Mar. 21	44.9
				Dec. 10	74.5
				1933—	
				Mar. 24	57.3

[a] Pumping.

16-G-No. 241, B. FERRANTI

Location and description—150 feet south of Burnet School Road and 0.9 miles east of Monterey Road. Windmill.

Reference point—Top of casing 18 inches above ground.

Elevation of reference point—373.0, Aneroid by Division of Water Resources.

Use—Domestic.

Depth—125-130 feet.

Tibbetts & Kieffer Well No. 1791—About one-eighth mile northeast. See 16-G-No. 242.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—					
Jan. 13	98.1				
Dec. 6	106.9				

16-G-No. 242, J. M. IMHOFF

Location and description—Near bend in Burnett School Road, 1.0 miles northeast of Monterey Road. Deep well turbine.

Reference point—Rim of hole in flange at ground level.

Elevation of reference point—370.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—210 feet.

Tibbetts & Kieffer Well No. 1791—Is same location. Elev. of R. P., 367.52.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1791		16-G-No. 242		16-G-No. 242	
1920—		1930—		1932—	
Sept. 20	79.5	Mar. 21	78.8	Mar. 21	69.1
Oct. 12	70.7	Dec. 6	102.9	Dec. 10	89.9
Oct. 26	[a]79.2				
Nov. 12	[a]78.7	1931—		1933—	
Nov. 27	[a]79.2	Mar. 13	91.1	Mar. 24	76.2
Dec. 11	[a]79.2	Sept. 17	112.4		
		Nov. 6	115.4		
1921—		Dec. 5	116.0		
Jan. 25	36.0				

[a] Pumping.

17-G-No. 243, JOHN GUIDO

Location and description—225 feet northwest of Cochran Road, 1,300 feet northeast of Monterey Road. Deep well turbine.

Reference point—Rim of hole in flange at ground level.

Elevation of reference point—359.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—180 feet.

Tibbetts & Kieffer Well No. 1793—About three-eighths mile northwest. Elev. of R. P., 345.96.

Remarks—Log available for T. K. No. 1793.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1793		**17-G-No. 243**		**17-G-No. 243**	
1920—		1930—		1932—	
Sept. 20	[a]59.0	Mar. 21	84.3	Mar. 21	77.5
Oct. 12	58.2	Dec. 6	90.6	Dec. 10	80.8
Oct. 26	59.0				
Nov. 29	60.3	1931—		1933—	
Dec. 11	60.6	Mar. 12	91.3	Mar. 24	81.1
		April 18	92.9		
1921—		June 29	98.5		
Jan. 25	[a]59.5	Sept. 17	100.5		
		Nov. 6	102.2		
		Dec. 5	103.0		

[a] Pumping.

17-G-No. 244, E. CORDIOLI

Location and description—1,000 feet northwest of Cochran Road and 1.3 miles northeast of Monterey Road. Deep well turbine.

Reference point—Lower edge of hole in side of head, 1.0 foot above ground.

Elevation of reference point—394.5, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—301 feet.

Tibbetts & Kieffer Well No. 1798—About one-quarter mile southeast. Elev. of R. P., 393.96.

Remarks—Nearest log, T. K. No. 1757.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1798		**17-G-No. 244**		**17-G-No. 244**	
1920—		1930—		1933—	
Sept. 24	[a]107.0	Mar. 21	103.0	Mar. 24	97.8
Oct. 12	[a]114.4	Dec. 6	115.9		
Oct. 26	108.8				
Nov. 12	[b]114.0	1931—			
Nov. 29	[b]108.2	Mar. 13	113.3		
Dec. 11	108.2	Dec. 5	132.6		
1921—		1932—			
Jan. 25	104.5	Mar. 21	93.7		
		Dec. 10	105.5		

[a] Pumping.
[b] Stopped pumping to measure.

17-G-No. 245, COUNTY OF SANTA CLARA

Location and description—20 feet south of center line of Cochran Road and 1.6 miles east of Monterey Road. Windmill.

Reference point—Top of casing 18 inches above ground.

Elevation of reference point—399.5, Aneroid by Division of Water Resources.

Use—Road sprinkling.

Depth—36-38 feet.

Tibbetts & Kieffer Well No. 1802—About three-eighths mile northeast. Elev. of R. P., 405.28.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1802		T. K. No. 1802		17-G-No. 245	
1920—		1921—		1930—	
Sept. 20	70.0	Jan. 25	64.7	Jan. 13	33.0
Oct. 12	71.0	1922—		Dec. 6	Dry
Oct. 26	70.8	Feb. 18	62.8	1931—	
Nov. 12	69.2			Mar. 13	34.0
Nov. 29	68.3			1932—	
Dec. 11	67.3			Mar. 21	(a)

[a] Well abandoned and casing filled with rocks.

5-F-No. 246, R. INGLIERI

Location and description—785 feet north of Reed Lane (Milliken Avenue), 0.4 miles northwest from Lawrence Road. Windmill.

Reference point—Top of casing, 8 inches above ground.

Elevation of reference point—80.0, Aneroid by Division of Water Resources.

Use—Domestic.

Depth—Unknown.

Tibbetts & Kieffer Well No. 497—About three-quarters mile northeast. See 5-F-No. 45.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
May 31	49.3	Mar. 19	48.8	Mar. 31	46.8
Dec. 20	45.2	Dec. 12	47.1	Dec. 2	45.6
				1933—	
				April 3	46.8

7-I-No. 247, W. E. BUCKNALL

Location and description—675 feet north of Bucknall Road and 0.5 miles east of Quito Road, Fig Tree Tea Room. Deep well turbine.

Reference point—Rim of hole in side of head, 6 inches above ground.

Elevation of reference point—244.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—400 feet.

Tibbetts & Kieffer Well No. 613—About one-half mile south. See 7-I-No. 101.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Dec. 24	188.6	Mar. 9	183.0	Mar. 18	200.5
		Sept. 16	[a]228.6	Dec. 1	211.0
		Nov. 5	[a]213.4	1933—	
		Dec. 2	222.6	Mar. 23	202.7

[a] Doubtful.

8-G-No. 248, J. B. BENSON

Location and description—400 feet south of Hamilton Avenue and 225 feet west of Leigh Avenue. Deep well turbine

Reference point—Center of gauge, 30 inches above pump house floor.

Elevation of reference point—173.0, Aneroid by Division of Water Resources.

Use—Irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 1275—About three-eighths mile southwest. Elev. of R. P., 183.35.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 1275		T. K. No. 1275		8-G-No. 248	
1920—		1921—		1930—	
Oct. 11	[a]135.0	Jan. 20	105.7	Dec. 6	154.6
Oct. 13	[a]121.5	Feb. 11	93.9	1931—	
Oct. 25	102.8			Mar. 10	151.2
Nov. 23	103.9			Dec. 3	170.1
Dec. 6	104.6			1932—	
Dec. 23	110.7			Mar. 19	141.2
				Dec. 13	163.0
				1933—	
				April 5	157.3

[a] Pumping.

2-H-No. 249, LOS ALTOS WATER COMPANY

Location and description—50 feet northeast of First Street and 850 feet northwest of El Monte Avenue, Los Altos, Well No. 3. Deep well turbine.

Reference point—Concrete floor of pit, 10 feet below ground and 1.0 foot above top of casing.

Elevation of reference point—209.0, Aneroid by Division of Water Resources.

Use—Domestic.

Depth—300 feet.

Tibbetts & Kieffer Well No. 196—About five-eighths mile northeast. See 2-H-No. 3.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Dec. 18	120.8	Mar. 17	131.4	Mar. 25	156.1
		Dec. 25	167.0	Dec. 15	150.9
				1933—	
				Mar. 31	[a]126.3

[a] This measurement correct.

2-H-No. 250, V. H. BOWER

Location and description—30 feet north of Portola Avenue and 225 feet west of Santa Rita Avenue, Los Altos. Deep well turbine.

Reference point—Center of gauge 1½ feet above concrete base and 2½ feet above ground up to and including March 23 1931, then top of concrete.

Elevation of reference point—90.5 up to and including March 23, 1931, then 89.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—330 feet.

Tibbetts & Kieffer Well No. 173—About one-half mile northeast. Elev. of R. P., 69.45.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
T. K. No. 173		**T. K. No. 173**		**2-H-No. 250**	
1920—		1921—		1930—	
Sept. 13	41.2	Jan. 4	33.9	Dec. 18	112.8
Oct. 16	38.4	Feb. 2	32.4		
Oct. 27	37.5	Feb. 19	31.6	1931—	
Nov. 15	34.6			Mar. 21	([a])
Nov. 29	31.0	1922—		Mar. 23	112.1
		May 15	42.0	Dec. 11	118.2
		1923—		1932—	
		Aug. 28	47.9	Mar. 25	114.5
				Dec. 15	121.3
				1933—	
				Mar. 31	117.9

[a] Pumping. Water level at greater depth than 193 feet; impossible to get measurement.

No. 251, WAI QUONG WONG

Location and description—500 feet northwest of Embarcadero, 900 feet northeast of first bend in Embarcadero northeast of Palo Alto. Open casing.

Reference point—Top of casing at ground level.

Elevation of reference point—8.0, Aneroid by Division of Water Resources.

Use—None.

Depth—Unknown.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Dec. 19	10.8	Mar. 18	9.2	Mar. 25	3.7
		Dec. 12	12.4	Dec. 15	9.5
				1933—	
				April 1	6.6

No. 252, A. ANDREA

Location and description—80 feet southwest of Ross Road and 275 feet southeast of College Avenue, Palo Alto. Centrifugal pump in pit.

Reference point—Top of casing, 6.0 feet below ground level.

Elevation of reference point—6.5, Aneroid by Division of Water Resources.

Use—Domestic

Depth—60 feet.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Dec. 17	13.2	Mar. 18	12.5	Mar. 25	7.4
		Dec. 12	13.6	Dec. 15	8.3
				1933—	
				April 1	7.8

1-G-No. 253, J. A. HUFF

Location and description—50 feet northwest of Charleston Road and 30 feet northeast of Middlefield Road. Centrifugal pump in pit.

Reference point—Top of casing, 3.0 feet below ground.

Elevation of reference point—18.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—Unknown.

Tibbetts & Kieffer Well No. 164—About 1.0 mile south. See 1-G-No. 1.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Dec. 19	14.0	Mar. 18	15.2	Mar. 25	6.3
		Dec. 12	14.1	Dec. 15	13.1
				1933—	
				April 1	14.0

2-G-No. 254, J. F. GOMEZ

Location and description—5 feet northeast of Southern Pacific right of way and 800 feet southeast of Rengstorff (Pastoria) Road at Castro Station. Deep well turbine.

Reference point—Rim of hole in flange 2.0 feet above ground.

Elevation of reference point—59.0, Aneroid by Division of Water Resources.

Use—Domestic and irrigation.

Depth—208 feet.

Tibbetts & Kieffer Well No. 164—About five-eighths mile northwest. See 1-G-No. 1.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Dec. 19	69.8	Mar. 18	65.1	Mar. 25	74.1
		Sept. 23	93.7	Dec. 15	80.4
		Nov. 7	84 1		
		Dec. 12	77.6	1933—	
				April 1	73.9

No. 255, EMWAY WATER COMPANY

Location and description—40 feet northwest of Matadero Avenue and 850 feet southwest of San Francisco Highway, near Mayfield. Deep well turbine.

Reference point—Rim of hole in flange near ground level.

Elevation of reference point—33.0, Aneroid by Division of Water Resources.

Use—Domestic.

Depth—Unknown.

Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet	Date	Dist. R. P. to water surface, feet
1930—		1931—		1932—	
Dec. 18	71.3	Mar. 18	65.9	Mar. 25	76.8
		April 18	83.1	Dec. 15	83 8
		Sept. 23	103.6		
		Nov. 7	86 9	1933—	
		Dec. 11	79.9	April 5	81.7

4-H-No. 256, J. CHARLES KIRCHER

Location and description—75 feet south of Fremont Avenue and 50 feet west of Stevens Creek.

Reference point—Top of casing, 1.0 foot above ground.

Elevation of reference point—210, by U. S. G. S.

Use—Domestic and irrigation.

Depth—500 feet.

Remarks—This record up to and including November 1, 1931, is supplied by W. B. McMillan of Palo Alto.

Date	Dist. R. P. to water surface, feet
1919—	
Feb. 3	142.0
April 5	133.0
Nov. 30	145.2
Dec. 11	145.5
1920—	
Jan. 4	145.6
Feb. 1	145.0
Mar. 2	149.5
Mar. 20	150.0
Mar. 28	150.5
April 5	152.0
April 14	152.0
April 26	154.0
May 7	155.2
May 14	155.5
May 23	156.3
May 28	156.8
June 6	157.7
June 23	160.0
June 28	159.0
July 3	159.0
July 18	159.7
July 25	159.8
Aug. 10	159.0
Aug. 22	158.8
Sept. 23	158.4
Oct. 18	158.8
Nov. 18	159.0
Dec. 4	157.7
1921—	
Jan. 1	157.0
Jan. 17	156.2
Jan. 28	155.5
Feb. 4	154.5
Feb. 13	152.3
Feb. 20	150.5
Feb. 27	148.5
Mar. 6	146.5
Mar. 19	142.4
April 3	139.2
April 10	138.5
April 16	137.8
May 5	143.7
June 5	150.5
June 20	150.0
July 10	151.3
July 23	152.0
Aug. 5	154.0
Sept. 14	155.0
Oct. 1	156.2
Oct. 16	155.5
Oct. 24	156.5
Nov. 6	156.0
Nov. 27	156.0
Dec. 10	156.0
Dec. 28	157.0
1922—	
Jan. 23	157.0
Feb. 1	157.0
Feb. 10	154.5
Feb. 19	153.5
Feb. 28	152.0
Mar. 12	149.5
Mar. 20	147.3
Mar. 30	144.0
April 4	143.2
April 9	142.0
April 15	141.3
April 17	138.6
May 1	144.0
May 17	153.5
May 30	153.7
June 2	153.5
June 12	153.0
June 25	153.5
July 5	154.3
July 29	153.0
Oct. 29	159.7
Nov. 6	157.7
1923—	
Jan. 2	156.2
Jan. 20	154.0
Feb. 6	152.0
Feb. 17	149.5
Mar. 4	147.0
Mar. 11	146.0
Mar. 18	146.7
Mar. 19	145.3
April 15	149.7
April 22	149.0
May 13	151.0
June 5	159.8
June 13	158.2
June 31	158.5
Aug. 6	158.3
Sept. 1	160.0
Oct. 15	161.8
Nov. 4	161.3
Nov. 18	161.0
Dec. 2	160.7
Dec. 24	160.8
1924—	
Jan. 19	161.2
Feb. 1	161.5
Mar. 20	171.0
April 16	170.0
April 19	171.0
April 25	169.5
May 3	170.7
May 13	172.3
May 23	173.0
May 28	175.0
June 8	178.0
June 19	184.0
July 1	184.0
July 14	179.0
July 23	181.3
Aug. 1	181.2
Aug. 8	182.7
Aug. 25	180.7
Sept. 10	185.0
Oct. 10	184.0
Nov. 11	181.3
Dec. 1	179.5
Dec. 15	179.0
Dec. 28	178.5
1925—	
Jan. 15	177.4
Feb. 20	178.7
Mar. 3	178.5
Mar. 15	176.8
Mar. 25	181.3
April 1	181.3
April 12	180.0
May 10	182.5
May 14	183.4
June 15	183.2
June 30	196.5
July 11	182.0
July 26	181.0
July 31	193.0
July 31	191.7
Aug. 18	192.0
Sept. 1	189.2
Sept. 9	191.3
Oct. 4	193.0
Oct. 10	193.6
Nov. 1	191.5
Nov. 10	190.0
Dec. 10	189.0
1926—	
Jan. 10	188.8
Jan. 17	186.0
Feb. 7	190.4
Feb. 9	186.6
Mar. 1	182.7
Mar. 28	187.3
April 24	182.0
May 5	188.4
June 21	189.5
July 18	189.3
July 28	194.2
Aug. 5	189.6
Sept. 7	194.0
Oct. 6	196.7
Oct. 23	191.7
Nov. 16	192.5
Nov. 26	188.7
Dec. 10	188.7

4-H-No. 256. J. CHARLES KIRCHER—Continued

Date	Dist. R. P. to water surface, feet
1927—	
Jan. 1	187.0
Jan. 18	186.0
Feb. 1	183.6
Mar. 26	180.4
April 10	176.0
April 18	174.0
May 1	172.6
May 19	172.4
June 4	171.5
June 23	171.4
July 1	173.0
July 22	183.2
Sept. 9	187.5
Oct. 1	187.4
Nov. 3	188.2
Nov. 25	185.5
Dec. 24	184.0
1928—	
Jan. 18	183.2
Feb. 4	182.7
Mar. 10	187.0
Mar. 24	190.5
April 3	184.0
April 14	183.1
May 27	197.0
June 18	195.0
July 13	194.2
July 29	196.0
Aug. 26	195.3
Oct. 26	189.0
Nov. 5	196.5
Nov. 25	194.0
Dec. 16	192.5
1929—	
Jan. 11	191.7
Feb. 2	191.2
Feb. 26	193.0
Mar. 19	194.0
Mar. 26	202.0
April 18	208.5
April 28	206.0
May 10	210.0
May 19	213.0
May 24	218.0
May 28	220.0
June 18	215.0
June 28	217.0
Aug. 1	209.0
Aug. 4	211.0
Aug. 10	215.0
Aug. 18	211.0
Aug. 28	212.0
Oct. 3	214.0
Nov. 3	213.5
Nov. 11	217.0

Date	Dist. R. P. to water surface, feet
1929—	
Nov. 20	215.0
Dec. 3	215.2
Dec. 18	214.0
1930—	
Jan. 1	210.2
Jan. 12	210.5
Jan. 20	211.7
Feb. 1	210.0
Feb. 16	212.0
Mar. 6	208.4
Mar. 10	208.5
Mar. 15	207.5
Mar. 22	207.3
Mar. 28	207.4
April 28	212.5
May 4	217.3
June 17	223.5
July 6	226.3
July 20	225.0
Aug. 2	230.0
Sept. 20	234.0
Sept. 21	227.0
Oct. 19	229.0
Oct. 26	226.0
Nov. 17	226.0
Dec. 1	226.0
Dec 14	223.0
1931—	
Jan. 1	221.3
Jan. 11	220.0
Jan. 19	219.0
Jan. 25	218.3
Feb. 1	218.7
Feb. 11	217.6
Feb. 22	215.3
Mar. 1	216.0
Mar. 11	218.0
Mar. 14	222.0
Mar. 14	225.0
Mar. 22	220.0
Mar. 29	228.0
April 12	231.0
April 18	232.0
April 25	230.0
May 3	231.0
May 17	240.7
May 24	250.0
May 30	246.0
June 14	239.3
June 20	238.0
Aug. 2	235.6
Sept. 20	240.5
Nov. 1	236.0
Dec. 11	233.0

Date	Dist. R.P. to water surface, feet
1932—	
Jan. 1	234.0
Jan. 8	232.0
Jan. 20	230.0
Feb. 2	229.0
Feb. 9	230.0
Feb. 20	227.5
Feb. 25	226.7
Mar. 6	226.0
Mar. 24	226.0
May 15	238.0
Oct. 3	238.0
Dec. 14	232.7
1933—	
Jan. 1	232.0
Feb. 1	230.0
Mar. 13	226.6
Mar. 31	224.7

PUBLICATIONS

DIVISION OF WATER RESOURCES

PUBLICATIONS OF THE

DIVISION OF WATER RESOURCES

DEPARTMENT OF PUBLIC WORKS

STATE OF CALIFORNIA

When the Department of Public Works was created in July, 1921, the State Water Commission was succeeded by the Division of Water Rights, and the Department of Engineering was succeeded by the Division of Engineering and Irrigation in all duties except those pertaining to State Architect. Both the Division of Water Rights and the Division of Engineering and Irrigation functioned until August, 1929, when they were consolidated to form the Division of Water Resources.

STATE WATER COMMISSION

First Report, State Water Commission, March 24 to November 1, 1912.

Second Report, State Water Commission, November 1, 1912, to April 1, 1914.

*Biennial Report, State Water Commission, March 1, 1915, to December 1, 1916.

Biennial Report, State Water Commission, December 1, 1916, to September 1, 1918.

Biennial Report, State Water Commission, September 1, 1918, to September 1, 1920.

DIVISION OF WATER RIGHTS

*Bulletin No. 1—Hydrographic Investigation of San Joaquin River, 1920–1923.

*Bulletin No. 2—Kings River Investigation, Water Master's Reports, 1918–1923.

*Bulletin No. 3—Proceedings First Sacramento-San Joaquin River Problems Conference, 1924.

*Bulletin No. 4—Proceedings Second Sacramento-San Joaquin River Problems Conference, and Water Supervisor's Report, 1924.

*Bulletin No. 5—San Gabriel Investigation—Basic Data, 1923–1926.

Bulletin No. 6—San Gabriel Investigation—Basic Data, 1926-1928.

Bulletin No. 7—San Gabriel Investigation—Analysis and Conclusions, 1929.

*Biennial Report, Division of Water Rights, 1920–1922.

*Biennial Report, Division of Water Rights, 1922–1924.

Biennial Report, Division of Water Rights, 1924–1926.

Biennial Report, Division of Water Rights, 1926–1928.

DEPARTMENT OF ENGINEERING

*Bulletin No. 1—Cooperative Irrigation Investigations in California, 1912–1914.

*Bulletin No. 2—Irrigation Districts in California, 1887–1915.

Bulletin No. 3—Investigations of Economic Duty of Water for Alfalfa in Sacramento Valley, California, 1915.

*Bulletin No. 4—Preliminary Report on Conservation and Control of Flood Waters in Coachella Valley, California, 1917.

*Bulletin No. 5—Report on the Utilization of Mojave River for Irrigation in Victor Valley, California, 1918.

*Bulletin No. 6—California Irrigation District Laws, 1919 (now obsolete).

Bulletin No. 7—Use of water from Kings River, California, 1918.

*Bulletin No. 8—Flood Problems of the Calaveras River, 1919.

Bulletin No. 9—Water Resources of Kern River and Adjacent Streams and Their Utilization, 1920.

*Biennial Report, Department of Engineering, 1907–1908.

*Biennial Report, Department of Engineering, 1908–1910.

*Biennial Report, Department of Engineering, 1910–1912.

*Biennial Report, Department of Engineering, 1912–1914.

*Biennial Report, Department of Engineering, 1914–1916.

*Biennial Report, Department of Engineering, 1916–1918.

*Biennial Report, Department of Engineering, 1918–1920.

* Reports and Bulletins out of print. These may be borrowed by your local library from the California State Library at Sacramento, California.

DIVISION OF WATER RESOURCES

Including Reports of the Former Division of Engineering and Irrigation

*Bulletin No. 1—California Irrigation District Laws, 1921 (now obsolete).

*Bulletin No. 2—Formation of Irrigation Districts, Issuance of Bonds, etc., 1922.

Bulletin No. 3—Water Resources of Tulare County and Their Utilization, 1922.

Bulletin No. 4—Water Resources of California, 1923.

Bulletin No. 5—Flow in California Streams, 1923.

Bulletin No. 6—Irrigation Requirements of California Lands, 1923.

*Bulletin No. 7—California Irrigation District Laws, 1923 (now obsolete).

*Bulletin No. 8—Cost of Water to Irrigators in California, 1925.

Bulletin No. 9—Supplemental Report on Water Resources of California, 1925.

*Bulletin No. 10—California Irrigation District Laws, 1925 (now obsolete).

Bulletin No. 11—Ground Water Resources of Southern San Joaquin Valley, 1927.

Bulletin No. 12—Summary Report on the Water Resources of California and a Coordinated Plan for Their Development, 1927.

Bulletin No. 13—The Development of the Upper Sacramento River, containing U. S. R. S. Cooperative Report on Iron Canyon Project, 1927.

Bulletin No. 14—The Control of Floods by Reservoirs, 1928.

*Bulletin No. 18—California Irrigation District Laws, 1927 (now obsolete).

*Bulletin No. 18—California Irrigation District Laws, 1929. Revision (now obsolete).

Bulletin No. 18-B—California Irrigation District Laws, 1931, Revision.

Bulletin No. 19—Santa Ana Investigation, Flood Control and Conservation (with packet of maps), 1928.

Bulletin No. 20—Kennett Reservoir Development, an Analysis of Methods and Extent of Financing by Electric Power Revenue, 1929.

Bulletin No. 21—Irrigation Districts in California, 1929.

Bulletin No. 21-A—Report on Irrigation Districts in California for the Year 1929, 1930.

Bulletin No. 21-B—Report on Irrigation Districts in California for the year 1930, 1931.

Bulletin No. 22—Report on Salt Water Barrier (two volumes), 1929.

Bulletin No. 23—Report of Sacramento-San Joaquin Water Supervisor, 1924–1928.

Bulletin No. 24—A Proposed Major Development on American River, 1929.

Bulletin No. 25—Report to Legislature of 1931 on State Water Plan, 1930.

Bulletin No. 26—Sacramento River Basin, 1931.

Bulletin No. 27—Variation and Control of Salinity in Sacramento-San Joaquin Delta and Upper San Francisco Bay, 1931.

Bulletin No. 28—Economic Aspects of a Salt Water Barrier Below Confluence of Sacramento and San Joaquin Rivers, 1931.

Bulletin No. 28-A—Industrial Survey of Upper San Francisco Bay Area, 1930.

Bulletin No. 31—Santa Ana River Basin, 1930.

Bulletin No. 32—South Coastal Basin, a Cooperative Symposium, 1930.

Bulletin No. 33—Rainfall Penetration and Consumptive Use of Water in Santa Ana River Valley and Coastal Plain, 1930.

Bulletin No. 34—Permissible Annual Charges for Irrigation Water in Upper San Joaquin Valley, 1930.

Bulletin No. 35—Permissible Economic Rate of Irrigation Development in California, 1930.

Bulletin No. 36—Cost of Irrigation Water in California, 1930.

Bulletin No. 37—Financial and General Data Pertaining to Irrigation, Reclamation and Other Public Districts in California, 1930.

Bulletin No. 38—Report of Kings River Water Master for the Period 1918–1930.

Bulletin No. 39—South Coastal Basin Investigation, Records of Ground Water Levels at Wells, 1932.

Bulletin No. 40—South Coastal Basin Investigation, Quality of Irrigation Waters, 1933.

* Reports and Bulletins out of print. These may be borrowed by your local library from the California State Library at Sacramento, California.

Bulletin No. 41—Pit River Investigation, 1933.

Bulletin No. 42—Santa Clara Investigation, 1933.

Biennial Report, Division of Engineering and Irrigation, 1920–1922.

Biennial Report, Division of Engineering and Irrigation, 1922–1924.

Biennial Report, Division of Engineering and Irrigation, 1924–1926.

Biennial Report, Division of Engineering and Irrigation, 1926–1928.

PAMPHLETS

Act Governing Supervision of Dams in California, with Revised Rules and Regulations, 1933.

Water Commission Act with Amendments Thereto, 1933.

Rules, Regulations and Information Pertaining to Appropriation of Water in California, 1933.

Rules and Regulations Governing the Determination of Rights to Use of Water in Accordance with the Water Commission Act, 1925.

Tables of Discharge for Parshall Measuring Flumes, 1928.

General Plans, Specifications and Bills of Material for Six and Nine Inch Parshall Measuring Flumes, 1930.

COOPERATIVE AND MISCELLANEOUS REPORTS

*Report of the Conservation Commission of California, 1912.

*Irrigation Resources of California and Their Utilization (Bul. 254, Office of Exp. U. S. D. A.) 1913.

*Report, State Water Problems Conference, November 25, 1916.

*Report on Pit River Basin, April, 1915.

*Report on Lower Pit River Project, July, 1915.

*Report on Iron Canyon Project, 1914.

*Report on Iron Canyon Project, California, May, 1920.

*Sacramento Flood Control Project (Revised Plans), 1925.

Report of Commission Appointed to Investigate Causes Leading to the Failure of St. Francis Dam, 1928.

Report of the California Joint Federal-State Water Resources Commission, 1930.

Conclusions and Recommendations of the Report of the California Irrigation and Reclamation Financing and Refinancing Commission, 1930.

*Report of California Water Resources Commission to the Governor of California on State Water Plan, 1932.

*Booklet of Information on California and the State Water Plan prepared for United States House of Representatives' Subcommittee on Appropriations, 1931.

*Bulletin on Great Central Valley Project of State Water Plan of California Prepared for United States Senate Committee on Irrigation and Reclamation, 1932.

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* Reports and Bulletins out of print. These may be borrowed by your local library from the California State Library at Sacramento, California.

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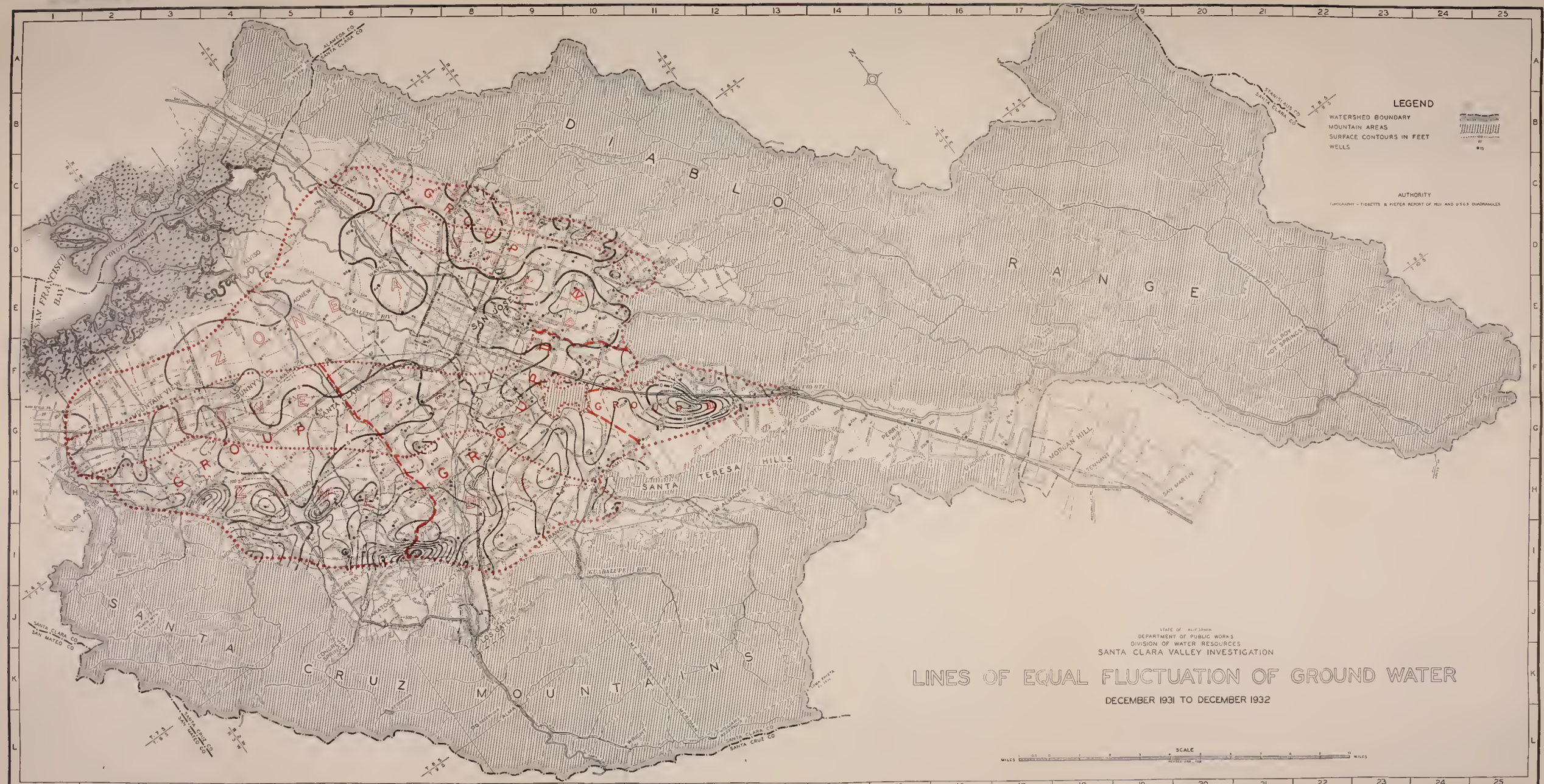
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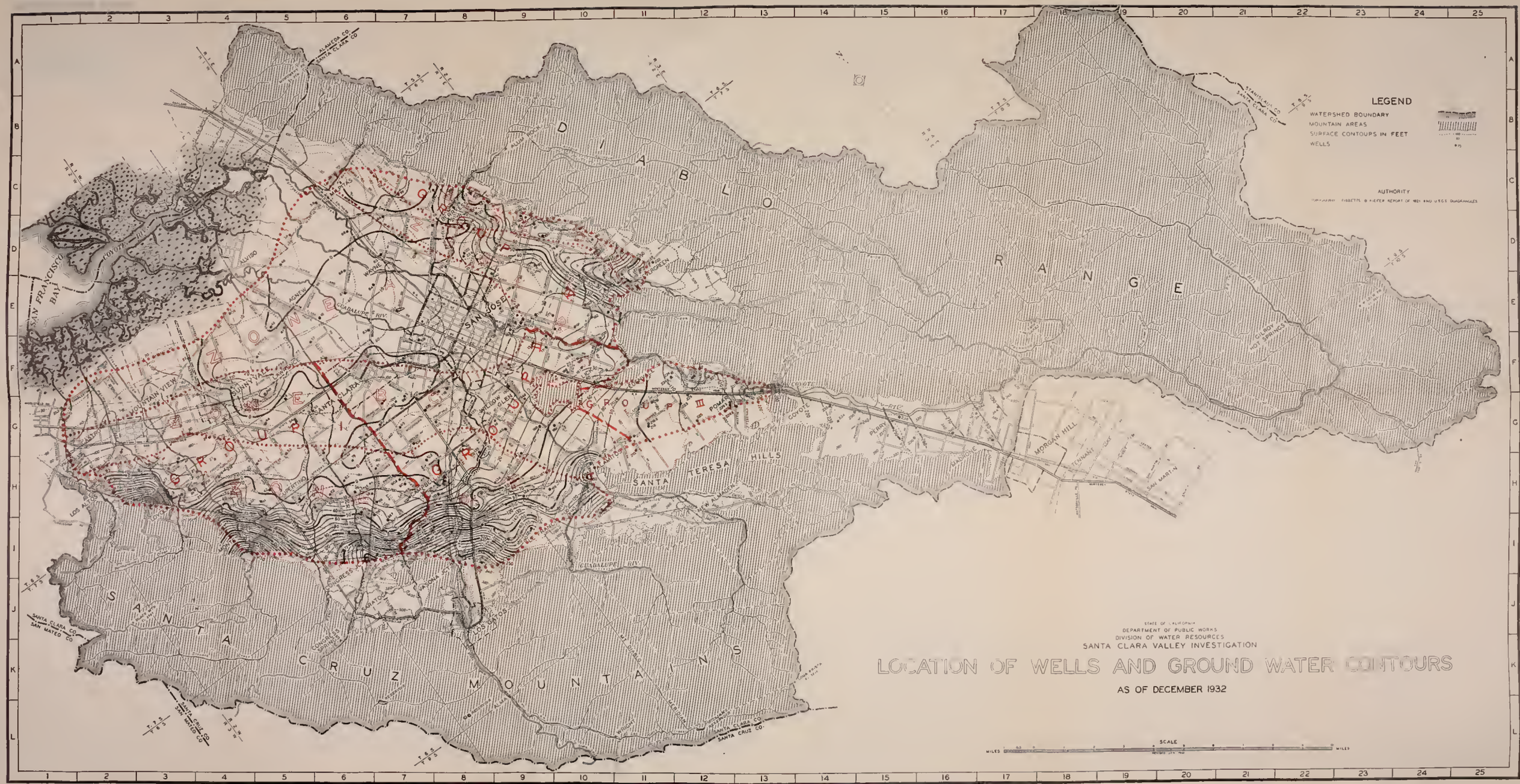
SANTA CLARA VALLEY INVESTIGATION
LINES OF EQUAL FLUCTUATION OF GROUND WATER
DECEMBER 1931 TO DECEMBER 1932
SCALE
MILES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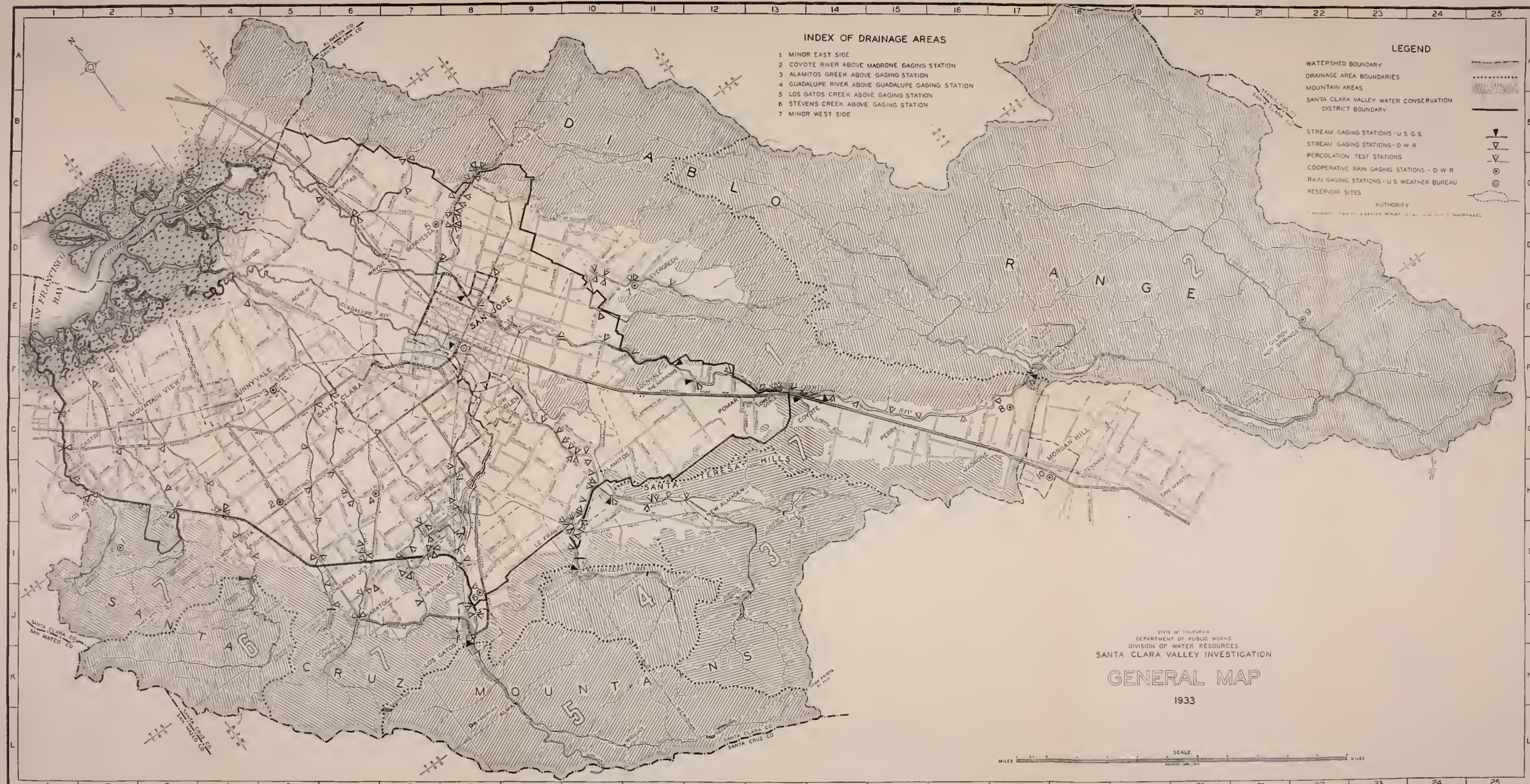
SANTA CLARA VALLEY INVESTIGATION
LOCATION OF WELLS AND GROUND WATER CONTOURS
AS OF DECEMBER 1932
SCALE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